
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 6-K

**REPORT OF FOREIGN PRIVATE ISSUER
PURSUANT TO SECTION 13a-16 OR 15d-16
UNDER THE SECURITIES EXCHANGE ACT OF 1934**

For the month of January, 2018

Commission File Number: 001-36815

Ascendis Pharma A/S

(Exact Name of Registrant as Specified in Its Charter)

Tuborg Boulevard 5
DK-2900 Hellerup
Denmark
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

Spokespersons of Ascendis Pharma A/S (the “Company”) plan to present the information in the presentation slides attached hereto as Exhibit 99.1 at various investor and analyst meetings scheduled during the week of January 8, 2018.

The furnishing of the attached presentation is not an admission as to the materiality of any information therein. The information contained in the presentation is summary information that is intended to be considered in the context of more complete information included in the Company’s filings with the Securities and Exchange Commission (the “SEC”) and other public announcements that the Company has made and may make from time to time by press release or otherwise. The Company undertakes no duty or obligation to update or revise the information contained in this report, although it may do so from time to time as its management believes is appropriate. Any such updating may be made through the filing or furnishing of other reports or documents with the SEC, through press releases or through other public disclosures.

Exhibits

<u>Exhibit No.</u>	<u>Description</u>
99.1	Company Presentation.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Ascendis Pharma A/S

Date: January 8, 2018

By: /s/ Michael Wolff Jensen

Michael Wolff Jensen

Chairman and Senior Vice President, General Counsel



Ascendis Pharma A/S

January 2018

Cautionary Note On Forward-Looking Statements:

This presentation contains forward-looking statements. All statements other than statements of historical facts contained in this presentation, such as statements regarding our future results of operations and financial position, including our business strategy, prospective products, availability of funding, clinical trial results, product approvals and regulatory pathways, collaborations, timing and likelihood of success, plans and objectives of management for future operations, and future results of current and anticipated products, are forward-looking statements. These forward-looking statements are based on our current expectations and beliefs, as well as assumptions concerning future events. These statements involve known and unknown risks, uncertainties and other factors that could cause our actual results to differ materially from the results discussed in the forward-looking statements. These risks, uncertainties and other factors are more fully described in our reports filed with or submitted to the Securities and Exchange Commission, including, without limitation, our most recent Annual Report on Form 20-F filed with the SEC on March 22, 2017, particularly in the sections titled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations". In light of the significant uncertainties in our forward-looking statements, you should not place undue reliance on these statements or regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified timeframe, or at all.

Any forward-looking statement made by us in this presentation speaks only as of the date of this presentation and represents our estimates and assumptions only as of the date of this presentation. Except as required by law, we assume no obligation to update these statements publicly, whether as a result of new information, future events or otherwise after the date of this presentation.

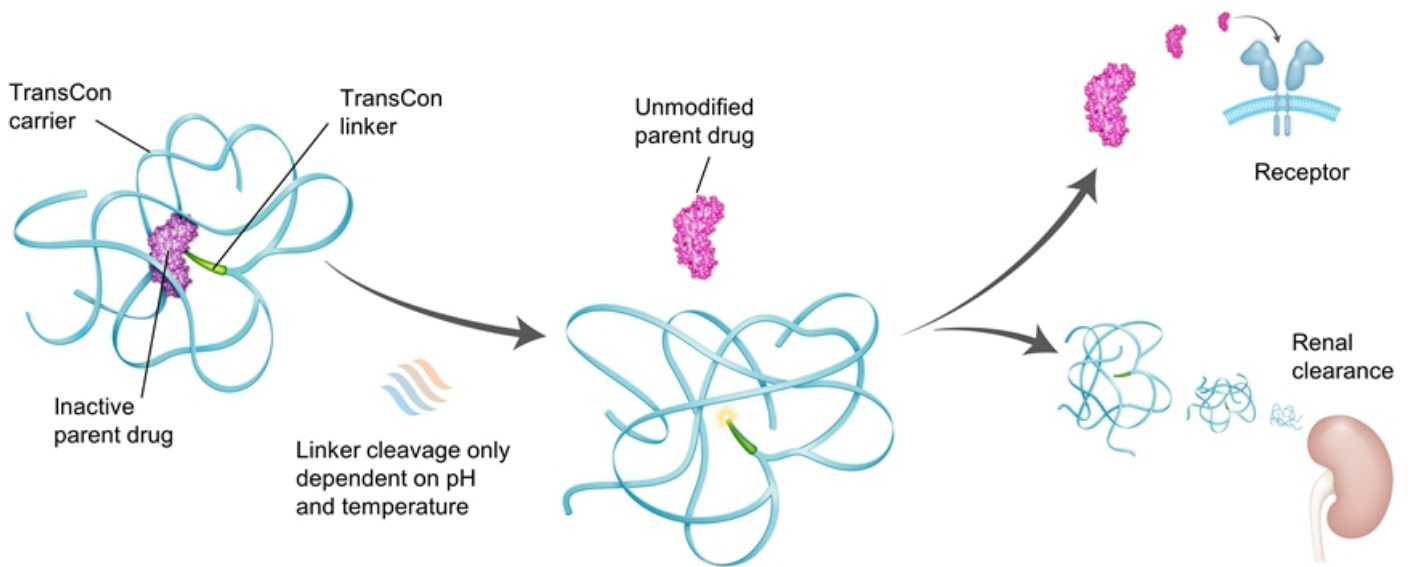
This presentation concerns product candidates that are or have been under clinical investigation and which have not yet been approved for marketing by the U.S. Food and Drug Administration, European Medicines Agency or other foreign regulatory authorities. These product candidates are currently limited by U.S. Federal law to investigational use, and no representations are made as to their safety or effectiveness for the purposes for which they are being investigated.

Ascendis is a trademark that we use in this presentation. Any other trademarks appearing in this presentation are the property of their respective holders.

Company Overview

- Create best-in-class rare disease products addressing unmet medical needs
 - Apply TransCon technology to parent drugs with clinical proof-of-concept
 - Expect higher development success rate compared to traditional drug development
- Endocrinology rare disease internal pipeline and expected key 2018 milestones
 - TransCon Growth Hormone for pediatric GHD: fliGHt (switch) Trial fully enrolled Q3
 - TransCon PTH for hypoparathyroidism: Phase 1 full data in Q2
 - TransCon CNP for achondroplasia: Phase 1 top-line data in Q4
- Build leading positions for each of our endocrinology rare disease products with commercial focus on the U.S. and selected European markets
- Established high-value collaborations with Roche/Genentech in ophthalmology and Sanofi in diabetes
- As of September 30, 2017, pro forma cash and cash equivalents of €222.5 million¹

TransCon Technology Overview



Parent drug is protected from receptor activation and clearance by transiently binding to the linker-carrier

Following injection, the TransCon linker slowly autohydrolyzes to release unmodified parent drug

Parent drug distribution as original compound; Linker-carrier elimination mainly by renal clearance




Ascendis Approach to Product Innovation

~4,800 Orphan Drug Designations
>500 Endocrine/Metabolic¹



Building a Leading Company in Rare Diseases

Internal Endocrinology Pipeline

PRODUCT CANDIDATE	PRE IND	PHASE 1	PHASE 2	PHASE 3	POTENTIAL WW MARKET ¹	WW COMMERCIAL RIGHTS
TransCon hGH	Pediatric Growth Hormone Deficiency				> \$3 billion ²	ascendis pharma 
TransCon PTH	Hypoparathyroidism				> \$2 billion ³	ascendis pharma 
TransCon CNP	Achondroplasia				> \$1 billion	ascendis pharma 

Strategic Collaborations

PRODUCT CANDIDATE	PRIMARY INDICATION	DEVELOPMENT STAGE	POTENTIAL WW MARKET ¹	WW COMMERCIAL RIGHTS
TransCon Anti-VEGF	Ophthalmology	Not disclosed	>\$7 billion	Genentech
TransCon Peptides	Diabetes	Not disclosed	>\$1 billion	SANOFI 

¹ Based on market data and company estimates

² Includes all indications

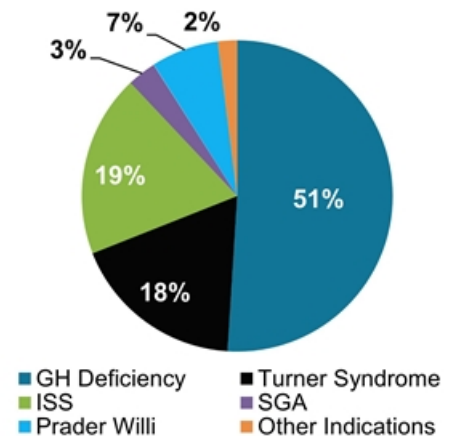
³ Based on treatment of ~25% of the U.S. patient population of ~80,000 patients

TransCon Growth Hormone: Once-Weekly Replacement Therapy



The Growth Hormone Market¹

- ~\$3.5 billion in worldwide daily hGH sales and growing (2.4% CAGR)
- Fragmented market with same undifferentiated hGH molecule competing on differentiated formulations, devices, services and access strategies
- Pediatric indications comprise ~90% of the market
- Indications for growth hormone treatment include:
 - Growth Hormone Deficiency (GHD) ~50% of market
 - Turner Syndrome
 - Idiopathic short stature (ISS)
 - Prader-Willi Syndrome
 - Small for Gestational Age (SGA)



Well established market primed for disruption by a long-acting growth hormone product

¹ Company research

Growth Hormone Deficiency: Clinical Manifestations

PEDIATRIC Growth Hormone Deficiency¹

- Growth failure
- Increased and abnormal fat distribution (especially truncal fat mass)
- Abnormal metabolic profile
- Impaired exercise capacity

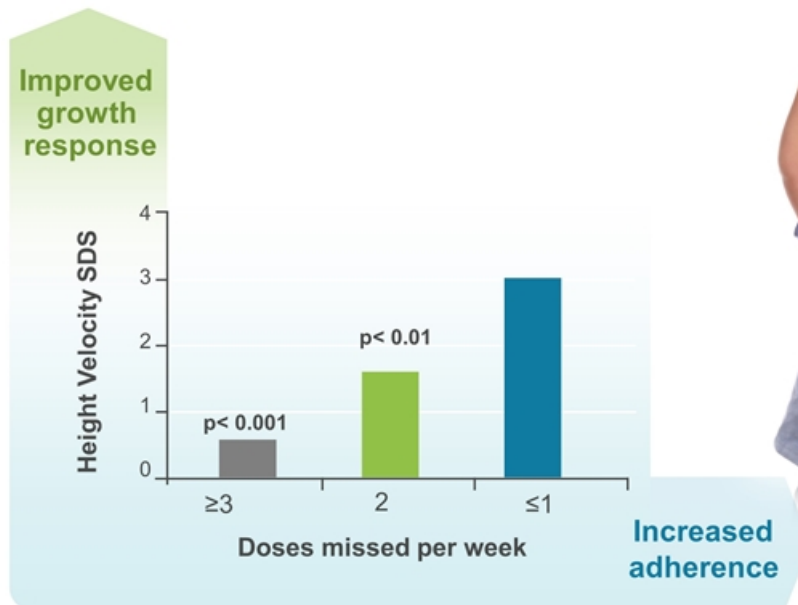
ADULT Growth Hormone Deficiency²

- Trunk fat accumulation and decrease in lean body mass
- Decreased bone mineral density
- Dyslipidemia
- Increased cardiovascular mortality and morbidity
- Decreased quality of life

Long-acting GH must fully mimic daily hGH to address the totality of the disease

Daily Growth Hormone: The Problem

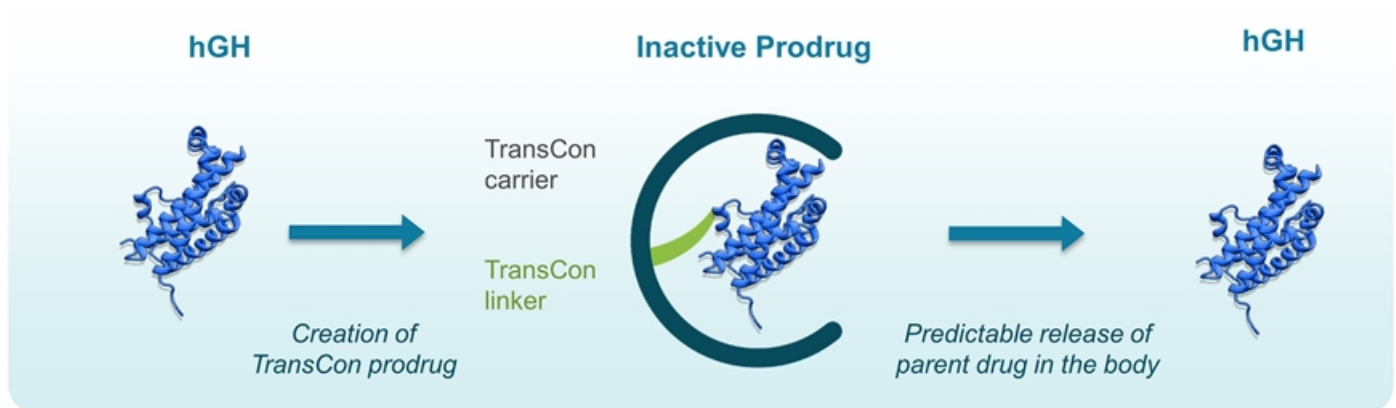
Poor adherence with daily growth hormone therapy is associated with reduced height velocity and impaired quality of life¹



Reduced frequency of administration is associated with better adherence²

In the first year, two of three patients miss >1 injection on average per week¹

TransCon Growth Hormone: The Opportunity

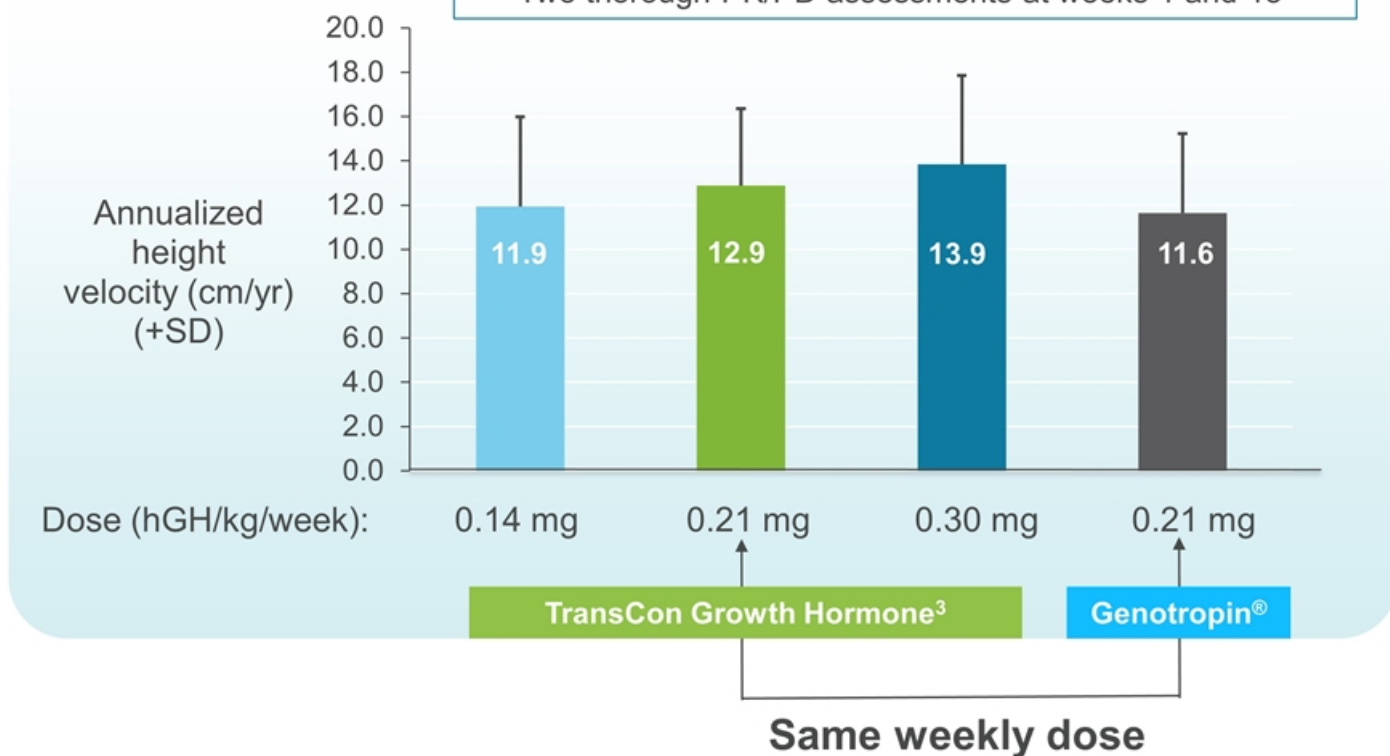


Once-weekly prodrug releasing unmodified hGH designed to mimic daily hGH:

- ✓ Tissue distribution
- ✓ Physiological levels
- ✓ Therapeutic effects: efficacy, safety and tolerability

Growth Comparable to a Daily hGH in Phase 2^{1,2}

- 26-week treatment period
- Two thorough PK/PD assessments at weeks 1 and 13

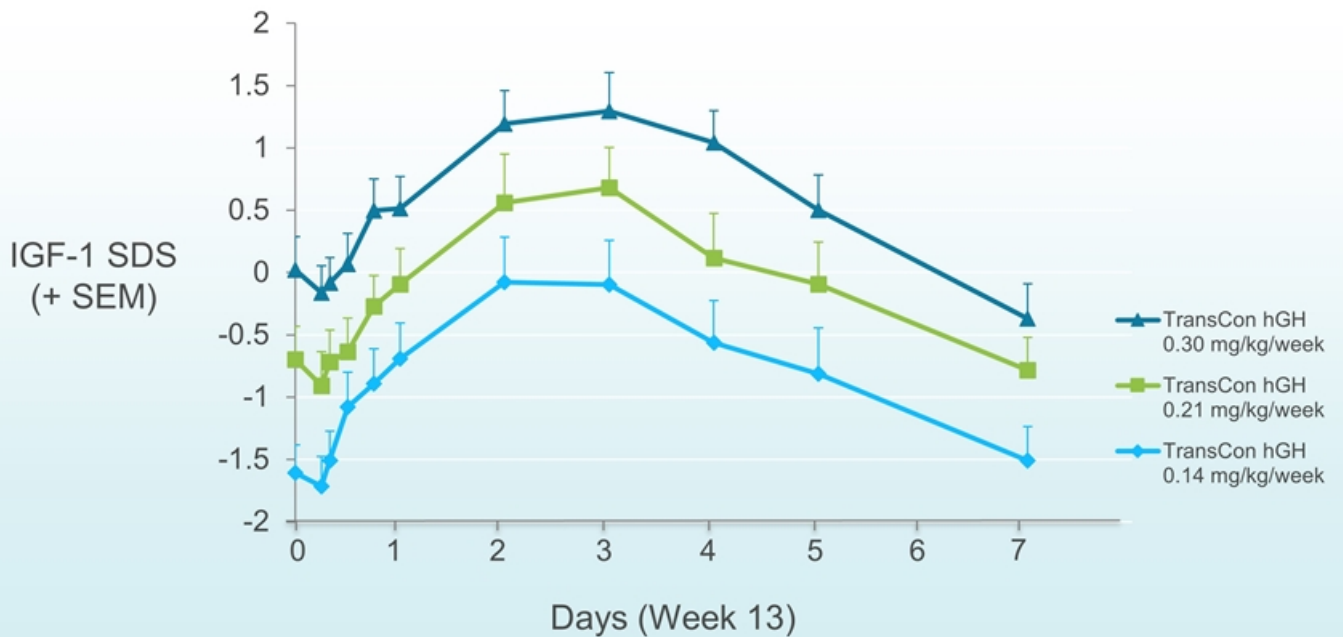


¹ Intergroup differences not statistically significant

² JCEM, DOI: 10.1210/jc.2016-3776

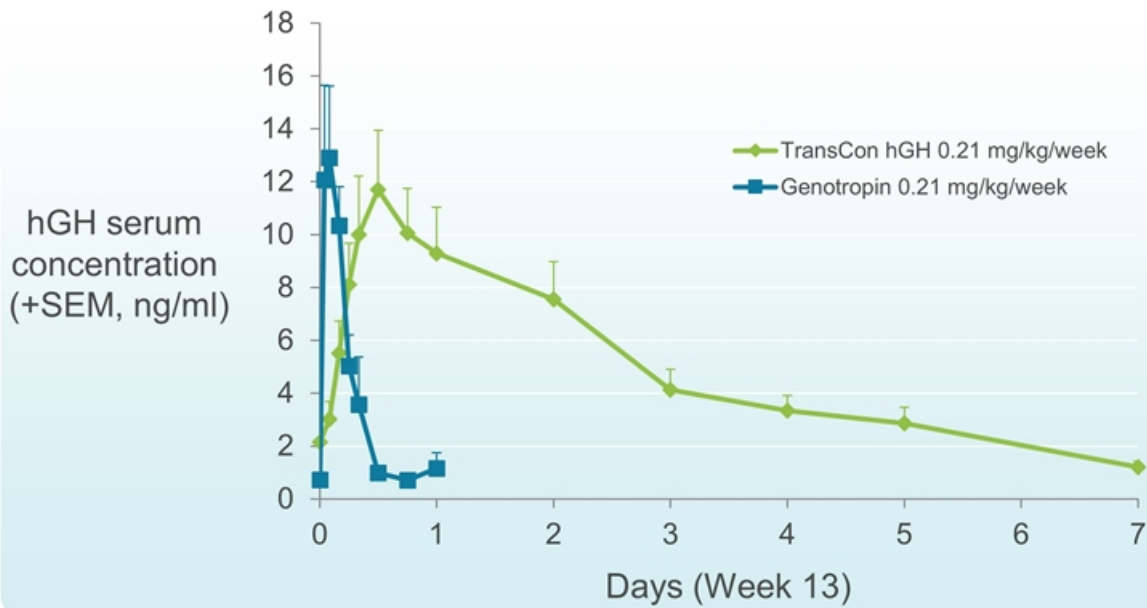
³ Conducted with a previous lower strength version of TransCon Growth Hormone

Dose Proportional IGF-1 in Phase 2¹



Transient point values of IGF-1 SDS > +2.0 have been observed in a small number of patients primarily at the highest dose level

Comparable hGH Levels in Phase 2¹



Maximum hGH concentration comparable between equivalent weekly doses of TransCon Growth Hormone and a daily hGH

Comparable Safety to a Daily hGH in Phase 2¹

**No Serious
Adverse Events
related
to study drug**

- Adverse events consistent with a daily hGH therapy observed and not different between cohorts

**Immunogenic
profile comparable
to a daily hGH**

- No occurrence of neutralizing antibodies
- Low incidence of low-titer non-neutralizing antibodies

**Injection site
tolerability
comparable to
a daily hGH**

- >1100 TransCon Growth Hormone injections administered in the phase 2 pediatric study
- No reports of lipoatrophy or nodule formation

TransCon Growth Hormone Phase 3 Update

height
TRIAL

- Pivotal trial
- Fully enrolled
- Data expected Q1 2019

flight
TRIAL

- Switch trial
- Enrollment completion
~Q3 2018

enlighten
TRIAL

Extension trial
(n= ~300)

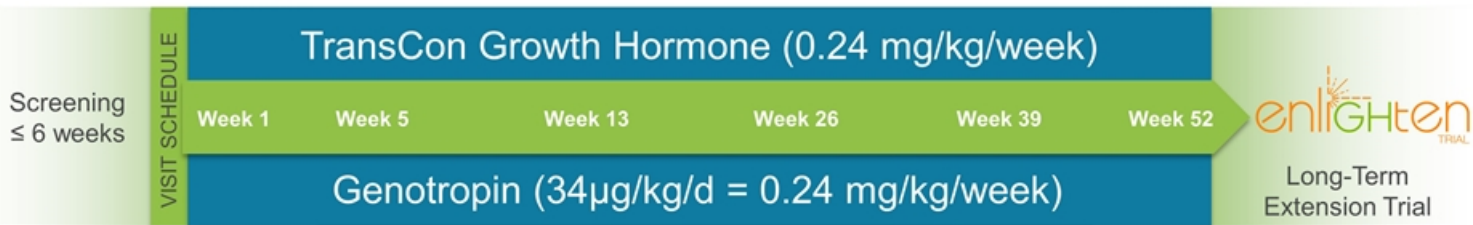
*Regulatory
Filings*

- FDA and EMA support size and scope of program for pediatric GHD filing
- Database lock for filing package Q3 2019

Phase 3 heiGHt Trial Ongoing



>160 Treatment-naïve children with GHD
(2:1 randomization)



Key Inclusion Criteria

- Prepubertal children with GHD
- Height SDS \leq -2.0
- IGF-1 SDS \leq -1.0
- GHD with 2 GH stim. tests (GH \leq 10 ng/mL)
- Bone age \geq 6 months behind chronological

Key Endpoints

- Annualized height velocity (HV) at 52 weeks (primary endpoint)
- Annualized HV at earlier time points
- Change in HT SDS over 52 weeks
- Change in serum IGF-1/IGFBP-3 levels
- Change in IGF-1 SDS and IGFBP-3 SDS
- Normalization of IGF-1 SDS

Auto-Injector Designed to Improve Adherence

Key Features

- Simple operation with few user steps
- A single low-volume (<0.60 mL) injection for patients less than 60kg
- Small needle, comparable to daily hGH (31G, 4mm)
- Room temperature storage
- No waste due to empty-all design
- Bluetooth® connectivity enabled for automatic data capture
- Device lifetime at least 4 years



Auto-injector introduction during extension study
and for commercial launch

Integrating with a Connected Healthcare System



TransCon Growth Hormone Target Product Profile




- Efficacy
- Safety (including immunogenicity)
- Tolerability

- Weekly subcutaneous administration
- Small injection volume (31G needle)
- Room temperature storage
- Device
 - Easy to use
 - Automatic data capture
 - Empty-all design

**Comparable to
Daily Growth Hormone**



TransCon Growth Hormone: Highlights

- Potential best-in and first-in class long-acting growth hormone in pediatric GHD
-  height TRIAL phase 3 top-line results expected Q1 2019
-  flight TRIAL expected to be fully enrolled Q3 2018
- Auto-injector developed and on-track for introduction in  enlighten TRIAL
- Improving adherence through integrated automatic data capture and connected healthcare system
- Commercial-scale manufacturing and supply chain established
- Multiple patent filings provide potential protection into 2038



TransCon PTH: Once-Daily for Hypoparathyroidism

Hypoparathyroidism: Serious Unmet Medical Need¹

- Parathyroid hormone (PTH) regulates calcium/phosphate homeostasis
 - Calcium is essential for muscle, skeletal, neurological and cardiac function
- Hypoparathyroidism (HP) is a rare disease characterized by deficient or absent PTH
 - Results in low calcium and increased phosphate blood levels
 - Most common cause (~75%) is inadvertent removal or damage to parathyroid glands during thyroid surgery
 - Approximately 80,000 patients in the U.S.
- HP results in diverse range of physical, cognitive, emotional symptoms and reflects a high burden across the healthcare system
 - Symptoms include muscle cramps, tetany, seizure, cardiac abnormalities, bronchospasm, laryngospasm and altered mental status

Hypoparathyroidism: Burden of Illness

- Calcium multiple times daily and vitamin D is current standard of treatment
- Despite current treatment, study showed¹:
 - 72% of patients experienced >10 symptoms* in the preceding 12 months
 - Symptoms were experienced for a mean of 13 ± 9 hours/day
 - Hospital stays or emergency department visits were required by 79% of patients
 - 85% reported an inability to perform household activities
 - 20% experienced a disease-associated change in employment status
- Patients on standard treatment compared to healthy controls have²:
 - 4-fold increased risk of hospitalization due to seizure
 - 4-fold increased risk of renal diseases (calcifications and renal insufficiency)

* Fatigue, muscle pain or cramping, paresthesia, tetany, joint or bone pain, pain/heaviness/weakness in extremities, brain fog/mental lethargy, inability to focus or concentrate, memory loss or forgetfulness, sleep disturbances, anxiety and depression

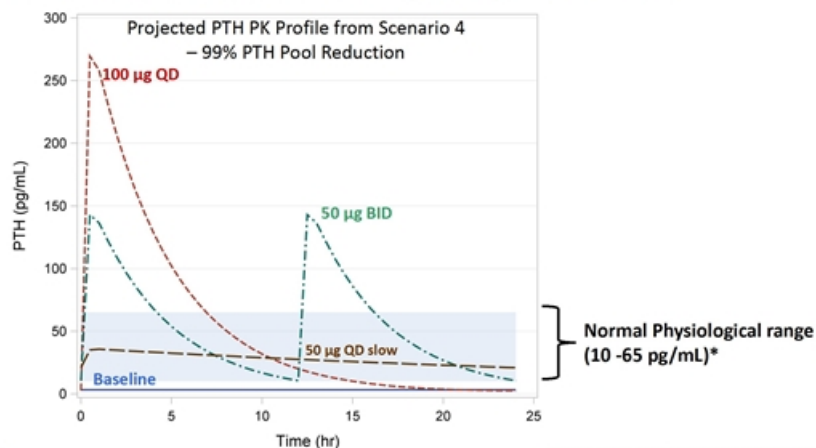
HP Treatment Strategies Are Evolving^{1,2}

- Conventional treatment by calcium and vitamin D does not fully replace the functions of PTH and can lead to:
 - Short-term complications of hypocalcemia, hypercalcemia and hypercalciuria
 - Long-term complications of impaired renal function and extraskeletal calcifications
- Once-daily Natpara/Natpar has been approved in the U.S. and Europe as an adjunct to calcium and vitamin D to control hypocalcemia in HP patients
 - Does not fully address all aspects of the disease, including hypocalcemia, hypercalcemia, hypercalciuria and bone turnover

TransCon PTH designed to address all aspects of the disease by normalizing:
blood/urinary calcium levels, serum phosphate and bone turnover

FDA Perspective on Optimal PTH PK Profile¹

Altering Regimen (QD to BID) or Release Profile Bring PTH Levels Close to the Physiological Levels



20

- Natpara QD provides dose-dependent increase in serum calcium for ~24 hours
- Natpara QD effect on urinary calcium excretion is short-lived (10-12 hours) as kidney reabsorption of calcium follows PK profile

Continuous PTH Infusion Led to Improved Outcomes

Desired Treatment Outcomes in HP	Natpara Once-daily ^{1, 2}	PTH (1-34) Infusion ³⁻⁹
Increase serum calcium	✓	✓
Reduce pill burden	✓	✓
Normalize urinary calcium excretion	✗	✓
Reduce hypercalcemia	✗	✓
Reduce hypocalcemia	✗	✓
Normalize serum phosphate	✓ (high-normal range)	✓
Normalize bone turnover	✗ (cortical bone loss)	✓

NIH clinical trials demonstrated superiority of continuous infusion > twice daily injections > once daily injections

¹ Natpara Product Label

² J Clin Endocrinol Metab 2016, 101(7): 2742-2750

³ JAMA 1996, 276(8): 631-636

⁴ J Clin Endocrinol Metab 1998, 83(10): 3480-3486

⁵ J Clin Endocrinol Metab 2003, 88(9): 4214-4220

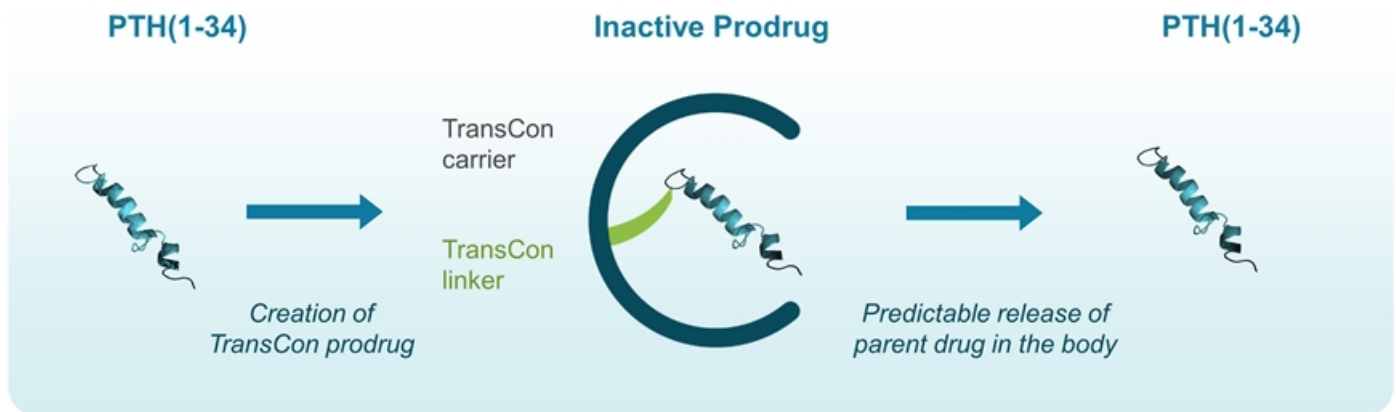
⁶ J Clin Endocrinol Metab 2008, 93(9): 3389-3395

⁷ J Clin Endocrinol Metab 2011, 96(11): 3308-3312

⁸ J Clin Endocrinol Metab 2012, 97(2): 391-399

⁹ J Pediatr 2014, 165(3):556-563

TransCon PTH Design



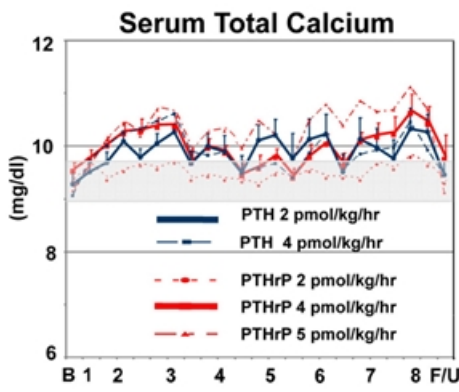
- TransCon PTH is a sustained-release prodrug, designed to provide stable free PTH levels in the physiological range for 24 hours a day
- TransCon PTH designed to normalize: blood/urinary calcium levels, serum phosphate and bone turnover

TransCon PTH Phase 1 Trial Design

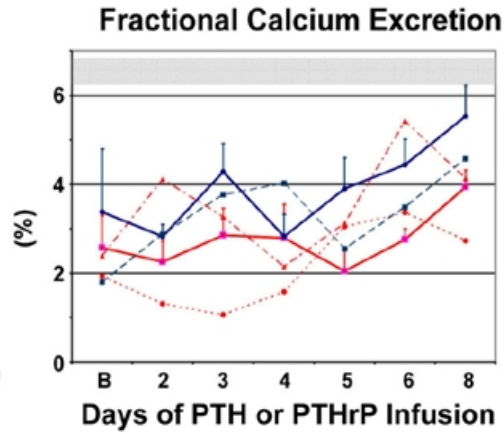
- Randomized, placebo controlled, single and multiple ascending dose trial to evaluate the safety, tolerability, PD and PK of TransCon PTH in healthy adults
- Primary Objective:
 - To assess the safety and tolerability of single and 10 multiple daily doses of TransCon PTH in healthy adults
- Secondary Objectives:
 - To evaluate the PD (serum Ca, endogenous PTH(1-84), and bone markers) and PK following single and multiple daily doses of TransCon PTH
 - To assess whether treatment affects urinary calcium excretion
 - To determine potential treatment-related anti-PTH and anti-PEG antibodies

Expectations for Phase 1 Trial in Healthy Volunteers¹

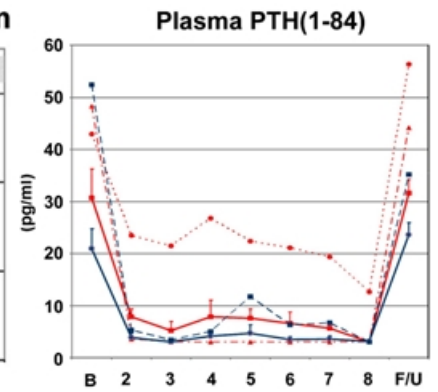
7-Day Continuous Infusion of PTH(1-34) in Healthy Adults¹



Dose-dependent increase in serum Ca



Small increase in urinary Ca excretion despite elevated serum Ca

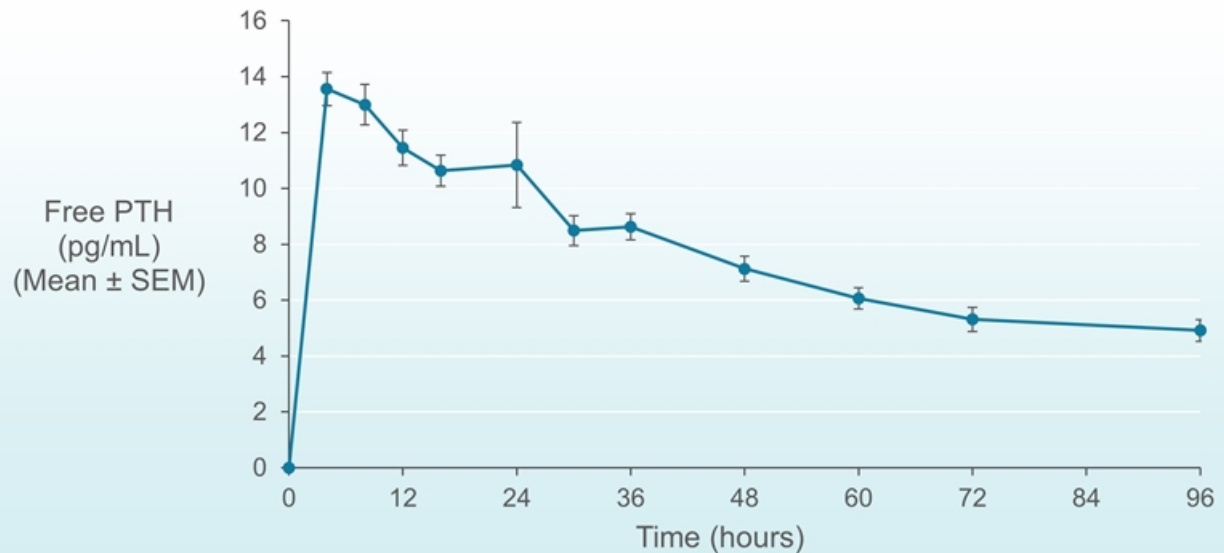


Dose-dependent down regulation of endogenous PTH(1-84)

¹ Journal of Bone and Mineral Research, Vol. 26, No. 9, September 2011, pp 2287–2297

Supports Infusion-Like Profile with Daily Administration

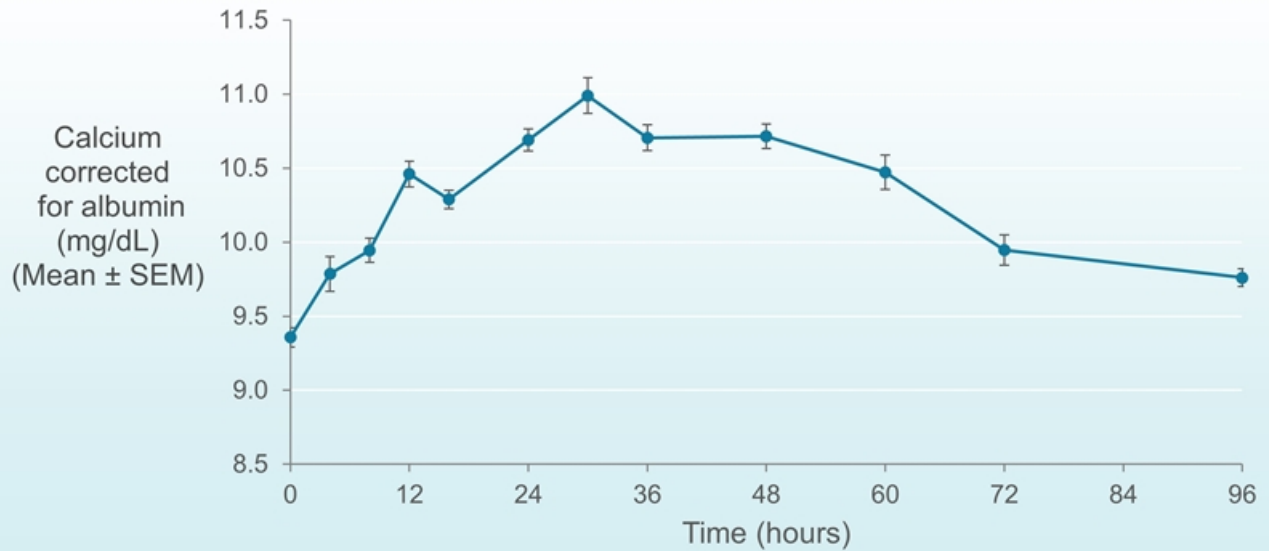
TransCon PTH 100 µg (n=8)



TransCon PTH phase 1 data reproduced PK profile from preclinical studies and showed $t_{1/2}$ of ~60 hours (versus Natpara $t_{1/2}$ ~3 hours)

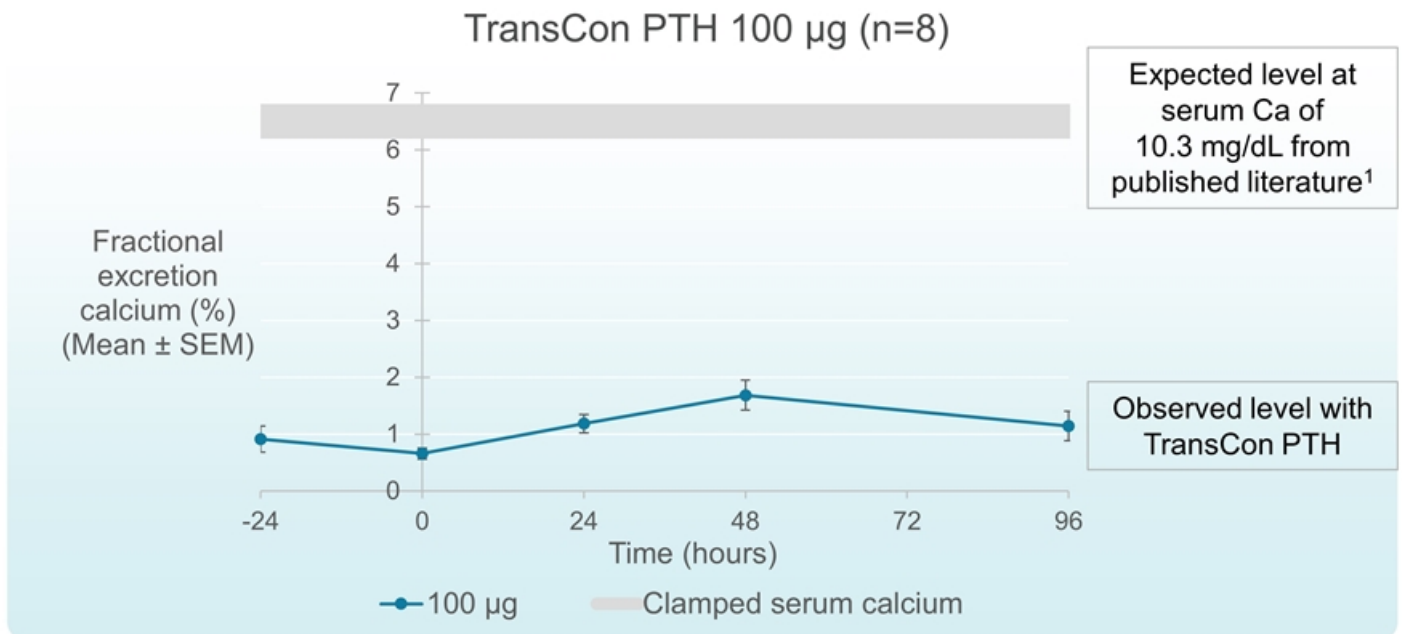
Single Dose Provided Sustained Calcemic Effect

TransCon PTH 100 μ g (n=8)



TransCon PTH led to sustained elevation of serum calcium lasting more than 72 hours with low inter-subject variability

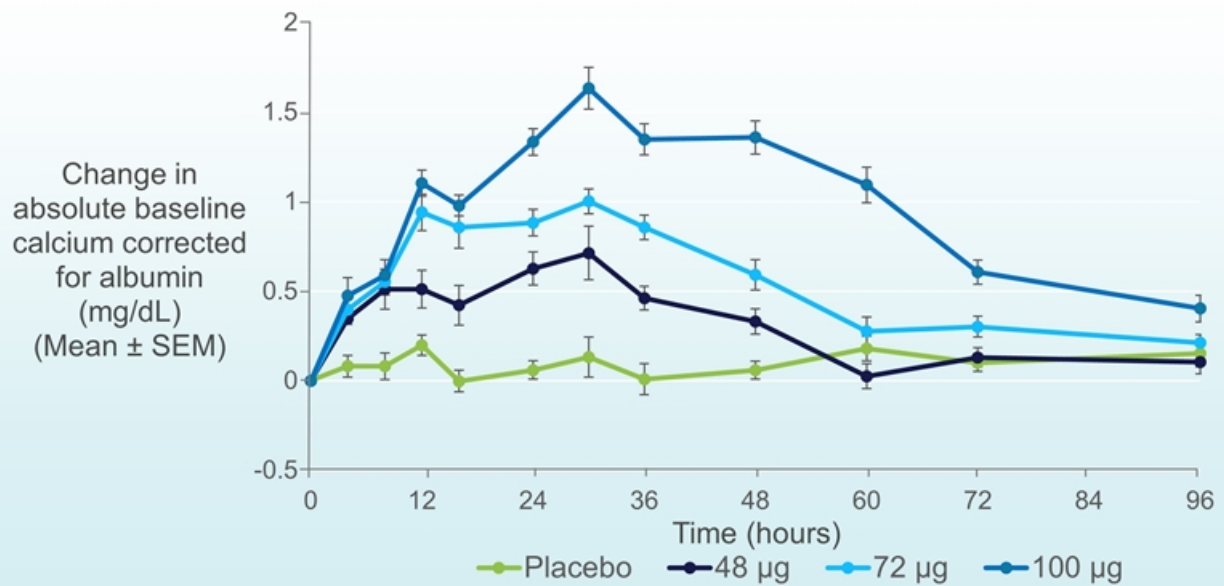
Expected Effect of TransCon PTH on Renal Calcium Excretion Observed in Phase 1



Despite increased serum Ca at 11 mg/dL fractional calcium excretion remained normal and far below the 6.5% range reported for healthy volunteers clamped to a serum Ca of 10.3 mg/dL², reflecting potent renal Ca reabsorption effect of TransCon PTH

Dose-Dependent Increase of Serum Calcium

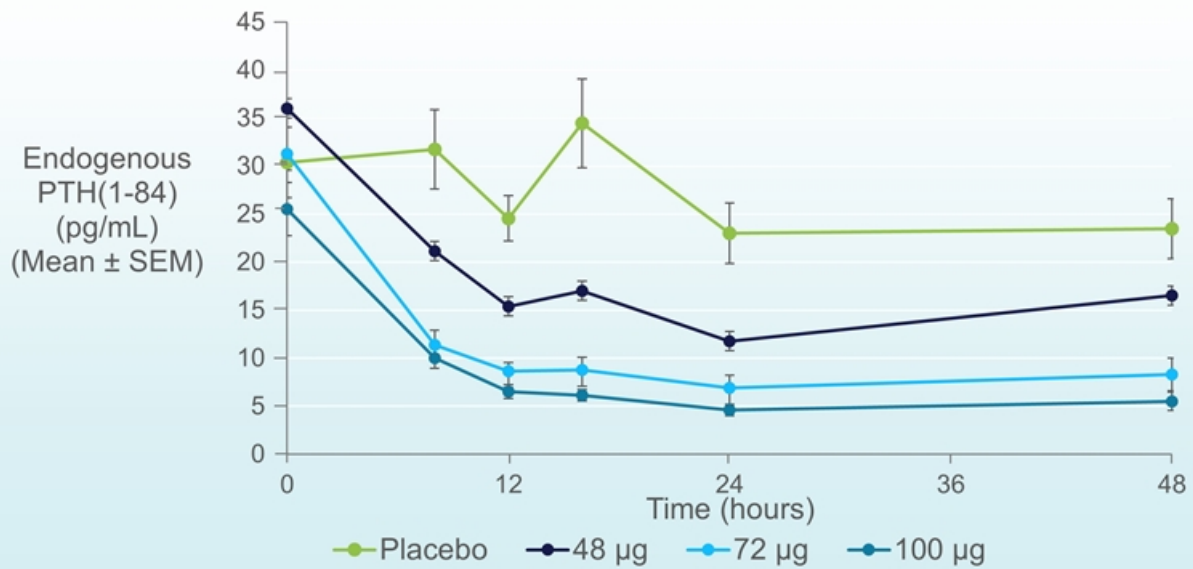
TransCon PTH 48, 72 and 100 μg (n=8/group)



Dose response and low inter-subject variability suggests ability to titrate and individualize dosing

Dose-Dependent Endogenous PTH(1-84) Response

TransCon PTH 48, 72 and 100 μ g (n=8/group)



TransCon PTH provided dose-dependent down regulation of endogenous PTH(1-84)

TransCon PTH: Highlights

- TransCon PTH based on parent drug PTH(1-34) with clinical proof-of-principle in HP and validated TransCon technology
- Interim phase 1 data supports target product profile as a true replacement therapy for HP
- Phase 1 full data set expected Q2 2018
- Planning pathway to phase 3:
 - Extensive clinical experience with PTH(1-34) and PTH(1-84) should enable advancement from phase 1 to phase 3
 - Phase 3 initiation planned Q1 2019
 - Device on-track for introduction in phase 3 enabling individualized dosing
- Multiple patent concepts provide potential protection into 2037



TransCon CNP: Once-Weekly CNP for Achondroplasia

Achondroplasia – Not Only a Skeletal Disease

**Autosomal
dominant genetic
disorder**

- Most common form of human dwarfism
- Approximately 250,000 patients worldwide¹
- 80% born to average-sized parents

**Patients suffer
numerous
comorbidities**

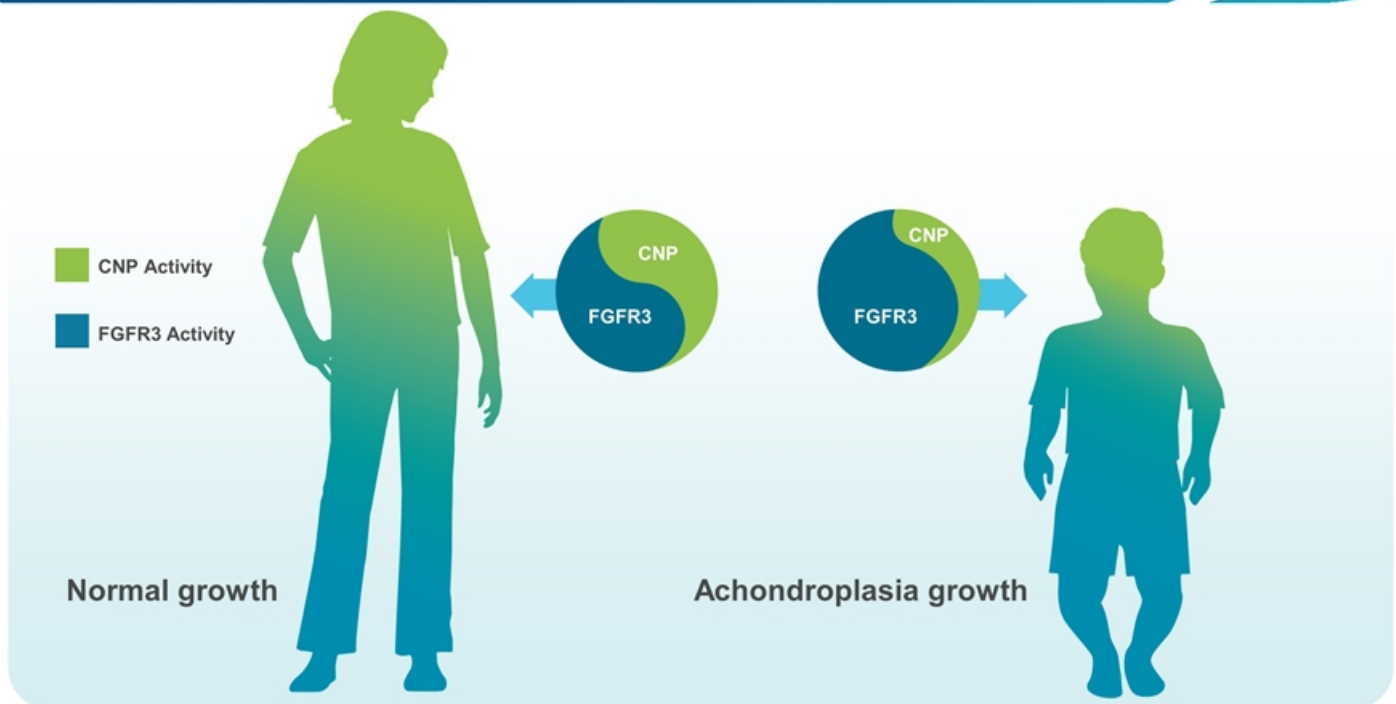
- Back/spine/cord compression
- Cardiovascular complications
- Dental complications
- Ear infections/sleep apnea
- Obesity
- Bowed legs

**No FDA-approved
therapy**

- Only option to improve height is surgical limb lengthening



Normal Growth Depends on Balanced Pathways



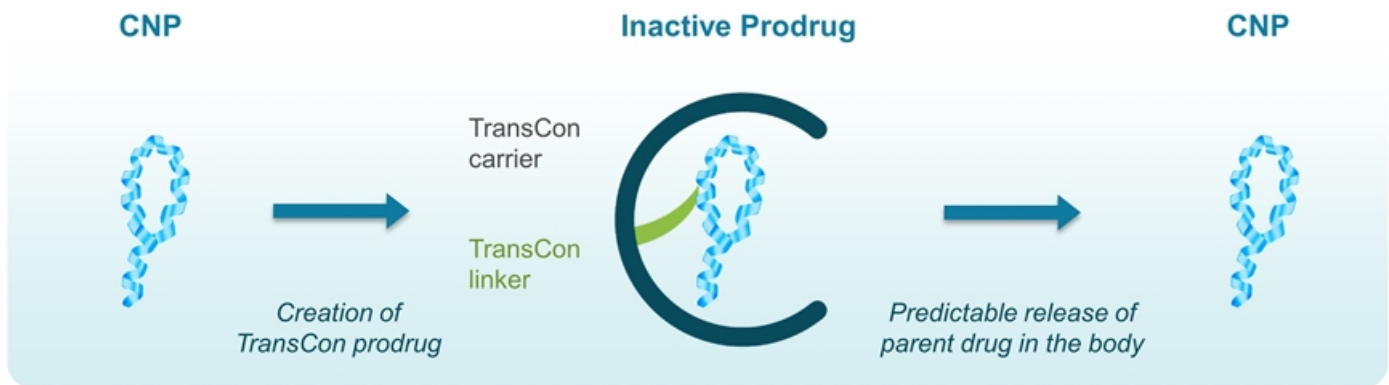
TransCon CNP is designed to provide continuous exposure to a CNP analogue to optimize efficacy with a well-tolerated and convenient once-weekly dose

Clinical Proof of Principle in Achondroplasia

- Vosoritide (CNP analog) in phase 3 for achondroplasia; reported promising height velocity data
 - Effects on growth at 12 months with 46-65% improvement from baseline in mean annual growth velocity¹
 - Vosoritide well tolerated, but hypotension observed in 40% of subjects receiving 15 µg/kg/day¹
 - Therapeutic coverage limited by the half-life of vosoritide (~20 min)

Therapeutic Goal: Optimize CNP efficacy with a well-tolerated and convenient dosage form

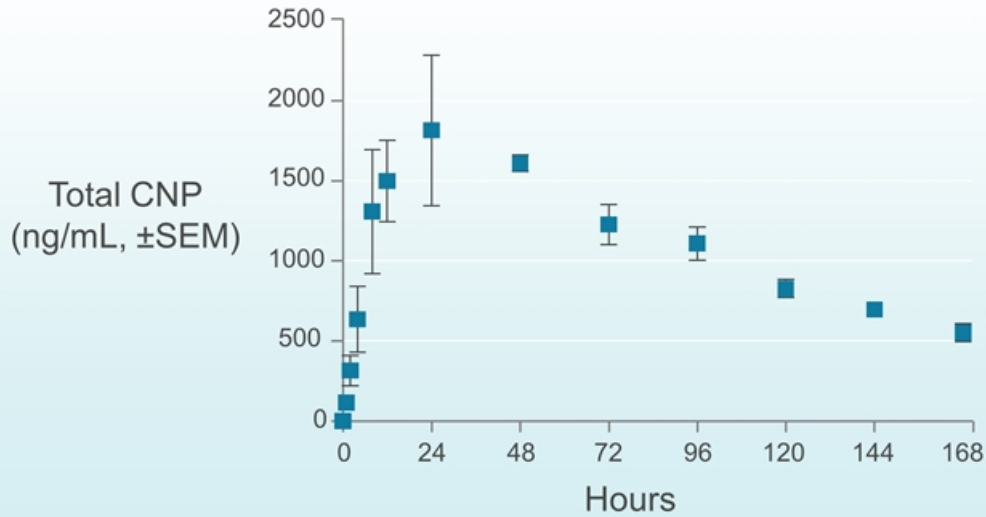
TransCon Technology Offers Potential Solution



- TransCon technology provides effective shielding of CNP:
 - From neutral endopeptidase degradation in subcutaneous tissue and blood compartment
 - Minimize binding of TransCon CNP to the NPR-C receptor to decrease clearance
 - Reduce binding of TransCon CNP to the NPR-B receptor to avoid hypotension
- Unmodified CNP liberated from TransCon CNP maintains small enough size to allow penetration into growth plates

TransCon CNP Weekly Profile Confirmed in Primates

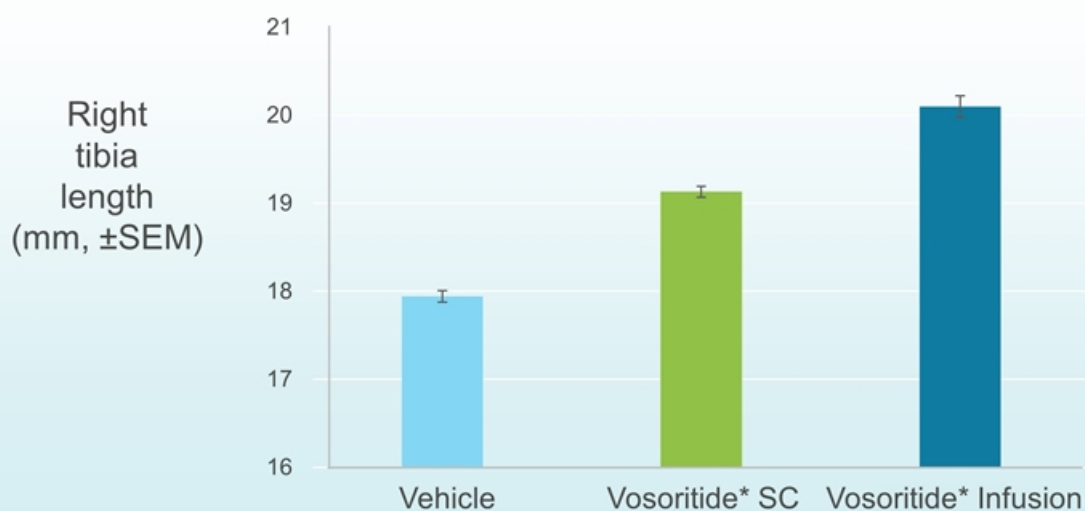
TransCon CNP following SC injections in cynomolgus monkeys (n=3)¹



- No cardiovascular adverse effects observed in preclinical models at doses exceeding the expected clinical dose

Continuous Infusion More Effective Than Daily

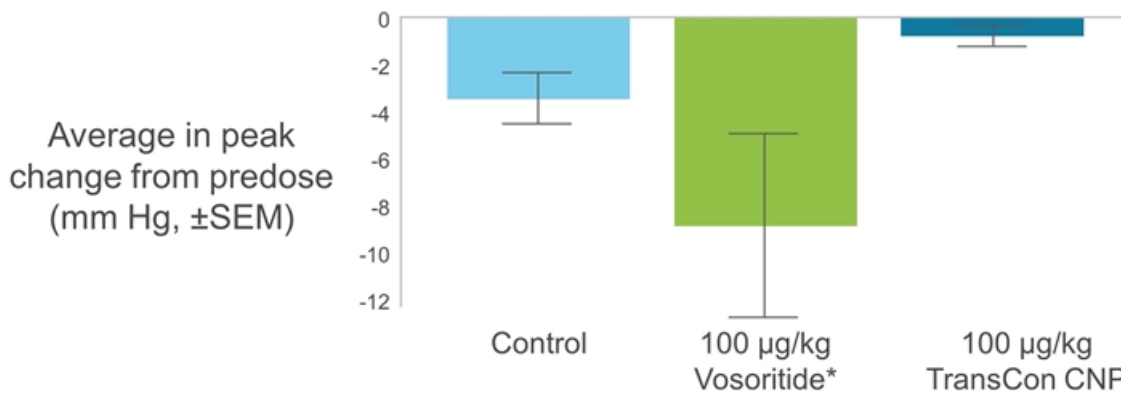
Mouse growth study right tibia length
50 nmol/kg/day (n=9/group)¹



- Same amount of CNP given as continuous infusion in mice is more efficacious than daily SC injection over 35 days
- Same effect demonstrated for Ascendis CNP peptide

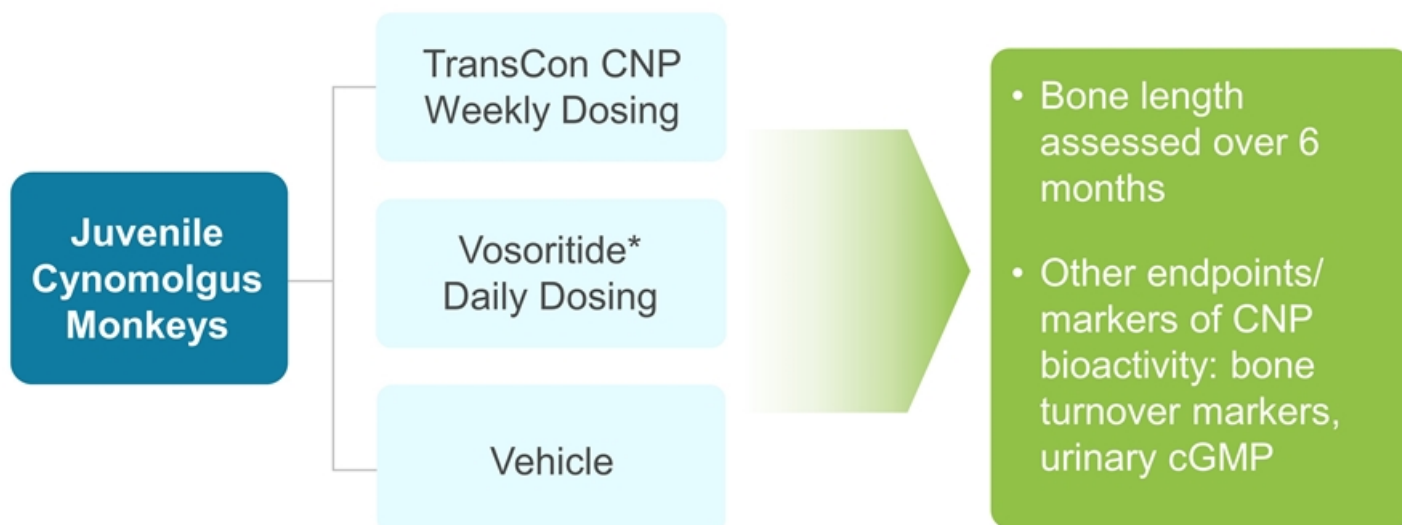
Well Tolerated Safety Profile

Change in systolic pressure in monkeys¹



- No adverse hemodynamic effects (e.g., hypotension) in cynomolgus monkeys or mice at levels exceeding the expected clinical dose
- Lack of adverse hemodynamic effect may widen therapeutic window, thereby enhancing efficacy

Juvenile Cynomolgus Growth Study Completed



- Growth velocity of different doses of TransCon CNP
- Compare weekly TransCon CNP to daily vosoritide

Juvenile Healthy Monkey Growth Study

Tibial growth at 6 months (n=4/group)¹

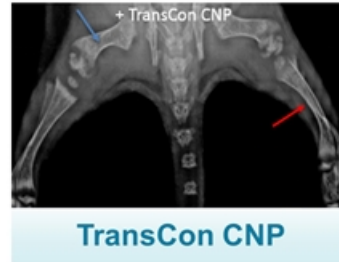
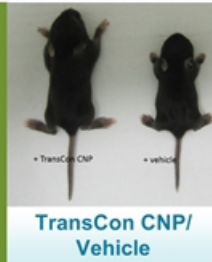


- Demonstrated dose-proportional tibial linear growth; ulnar growth consistent
- Compared to untreated control, growth increased >70% with highest TransCon CNP dose vs. 35% with vosoritide* at a higher weekly dose

TransCon CNP in Achondroplasia Disease Model (Fgfr3^{Y367C/+})¹

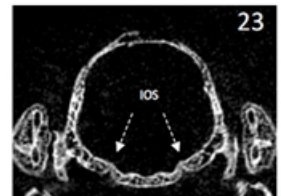
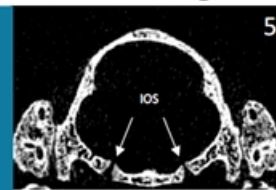
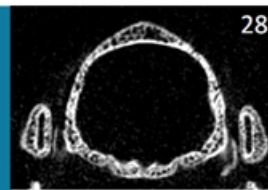
Linear and Skeletal Growth in Achondroplasia Mice

TransCon CNP reversed the phenotype, restoring growth



Preventing Premature Fusion of Synchondroses of Foramen Magnum

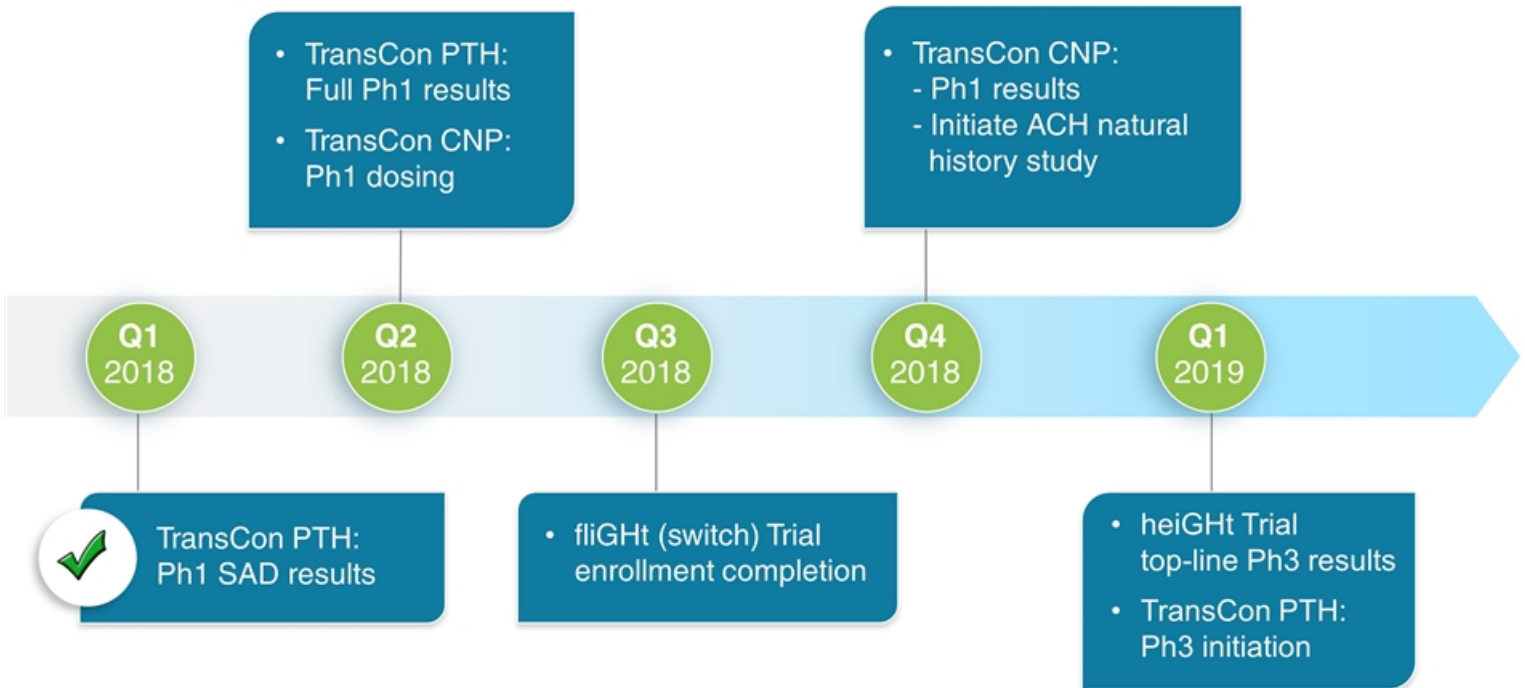
TransCon CNP may ameliorate most disabling achondroplasia traits, including stenosis of the foramen magnum



TransCon CNP: Highlights

- TransCon CNP leverages Ascendis technology platform to develop a once-weekly administration, without dose-limiting cardiovascular adverse effects
 - Shields CNP from NPR-C receptor clearance and NPR-B induced-hypotension
 - Prolonged half-life extension and efficacy trend observed in cynomolgus monkeys
 - Reversion of phenotypical traits and comorbidities in mouse model of achondroplasia
- Phase 1 study submission in Australia completed
- Phase 1 top-line results expected Q4 2018
- Multiple patent concepts provide potential protection into 2037

Selected Expected Milestones



Three Product Opportunities: >\$1 Billion Each



TransCon Growth Hormone

- Long-acting growth hormone that delivers unmodified hGH
- Pivotal phase 3 trial fully enrolled; data readout Q1 2019



TransCon PTH

- Infusion-like profile potentially addresses all aspects of HP
- Phase 1 ongoing; data 1H 2018
- Phase 3 initiation planned Q1 2019



TransCon CNP

- Efficacy without potential dose-limiting cardiovascular adverse effects; once-weekly dosing in achondroplasia
- Phase 1 to be initiated 2018; data Q4 2018