PRESS RELEASE

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ObsEva Presents Pharmacology Data Showing that OBE001, the First Orally Active Oxytocin Antagonist, Inhibits not only Uterine Contractions but also Preterm Labor Related Inflammation Pathways

Geneva, Switzerland, 01 September 2015 – ObsEva, a Swiss biopharmaceutical company developing a novel generation of drugs addressing serious conditions compromising pregnancy from conception to birth, presented today the data of ex-vivo pharmacology studies with its lead compound, OBE001, a novel orally active oxytocin receptor antagonist. The studies comprised the assessment of contractions in uterine muscle (myometrium) explants obtained from pregnant women and the effects on oxytocin-induced inflammatory responses in human gestational tissues. OBE001 was compared to the marketed oxytocin receptor antagonist, Atosiban, which is administered by intravenous infusion. The results of the pharmacology studies have been presented today at the European Society for Translational Medicine meeting in Vienna, Austria.

Oxytocin plays a key role in term and preterm labor - it is one of the strongest agents to stimulate uterine contractions. Oxytocin is also known for its pro-inflammatory role in human gestational tissues which further contributes to labor. Tocolytics targeting the oxytocin system should ideally inhibit contractions and inflammation in the context of preterm labor.

The contractility study compared the effects of equimolar concentrations of OBE001 and Atosiban upon spontaneous and oxytocin-induced contractions of human pregnant myometrium tissue ex vivo. Atosiban had no effect upon spontaneous contractions but dose-dependently antagonized the effects of oxytocin. In contrast, OBE001 inhibited both spontaneous and oxytocin-induced contractions in a dose-dependent manner and led, unlike Atosiban, to complete abolishment of contractility at high concentrations.

The potential of OBE001 to inhibit the oxytocin-driven activation of inflammatory responses was evaluated in cultured myometrium and amnion primary cells. In contrast to findings with Atosiban, presence of OBE001 and oxytocin led to significant inhibition of oxytocin-induced inflammatory pathways activation (NF-κB and p38 proteins) and translated into suppression of inflammatory mediators known to be associated with labor (COX-2, IL-6, IL-8 and CCL2). OBE001 alone had no significant effect on the activation of NF-κB and p38 pathways and downstream pro-labor gene expression whereas Atosiban alone activated inflammatory pathways.

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"Our data suggests that OBE001 is a promising candidate tocolytic, as it ensures effective inhibition of uterine contractility and suppresses the oxytocin-driven pro-inflammatory effects in gestational tissues. Acting on several pathways leading to labor, OBE001 appears to have a superior tocolytic profile than Atosiban." said Oliver Pohl, Senior Director Non-Clinical Development and Phase 1 of ObsEva. Professor Phillip Bennett of ObsEva's Scientific Advisory Board added *"Prematurity is now recognised to be the biggest cause of the death of newborn babies throughout the world. It is also one of the major causes of long term handicap. There is an urgent need for treatments which can prevent or delay preterm birth safely. Our studies in the laboratory show that OBE001 potentially has significant advantages over the drugs currently in use which is very encouraging as the drug enters Phase 2 studies in women who are in preterm labor."*

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About Preterm Labor

According to The Global Action Report on Preterm Birth "Born Too Soon" issued by World Health Organization in 2012, 15 million babies are born too soon (born before 37 weeks of gestation) every year. This represents more than 1 in 10 babies worldwide. Over 1 million children die each year due to complications of preterm birth and many survivors face a lifetime of disability. The rates of preterm births are rising in almost all countries and are associated with an important financial burden to the society. The annual healthcare costs associated with preterm births was estimated in 2005 at approximately 27 billion USD in the USA. Costs after the neonatal period for lifetime medical & special services reach more than 500 thousand USD per premature handicapped child. Preterm labor is characterized by premature uterus contractions leading to birth before 37 weeks.

About OBE001

OBE001 is a new generation oxytocin antagonist. Oxytocin antagonists are potent inhibitors of uterine contractions. OBE001 is a compound for oral treatment of preterm labor and is being studied in a Phase 2 proof of concept study for delaying preterm birth. For additional information, please visit www.ObsEva.com and see the Press release dated 23 June 2015.

About ObsEva

ObsEva is a clinical stage biopharmaceutical company focusing on the development of a novel generation of drugs addressing serious conditions compromising pregnancy from conception to birth. Our lead programs target the underserved problems of infertility and preterm labor affecting more and more women worldwide. The ObsEva team's unique development expertise is supported by top-tier investors in order to build a leading company in pregnancy pharmaceuticals. www.ObsEva.com

For more information, please visit www.ObsEva.com

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