Prenatal enzyme replacement therapy

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Technology description

Category:
Therapeutic
Summary:
The invention contemplates transplacental enzyme replacement therapy (ERT) for deficiency of a polypeptide such as a tissue-nonspecific alkaline phosphatase (TNSALP) by administering a before-described pharmaceutical composition to a pregnant animal whose fetus or embryo is in need of such therapy. The fusion protein of such a composition comprises a water-soluble TNSALP portion, e.g., C-terminus-truncated TNSALP peptide-bonded to an IgG1 antibody Fc portion. The invention also contemplates a method for treating a metabolic disorder, such as HPP, in a fetus or embryo where a protein is administered to a pregnant mother. The fusion protein comprises a Fc fragment of an IgG1 antibody peptide-bonded to TNSALP. The protein crosses the placenta of the mother and enters the fetal blood stream. The protein is taken up into fetal tissue such that the TNSALP restores normal metabolic activity in the fetus.

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