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A Study on the lead optimization for the development of new antibody drug for androgenic alopecia and alopecia areata

Epibiotech

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OTHERS	Lead

Product Type	Antibody drug (EPI-005)
Indication	Androgenic alopecia and alopecia areata
Target	CXCL12
MoA(Mechanism of Action)	• EPI-005 target (CXCL12) is expressed and secreted by dermal fibroblasts to stimulate follicular cells through receptors. • EPI-005 stimulates dermal papilla cells activating STAT and promotes entrance to catagen stage ---> hair loss (alopecia areata) • EPI-005 target inhibition is effective in preventing hair loss and promoting hair growth---> Confirmation of excellent hair loss prevention and hair growth promotion effect of target neutralizing antibody EPI-005
Competitiveness	1. Superiority of efficacy: demonstrating low dosage and high efficacy ➡ Possibility to secure safety 2. Achieve excellent and lasting effects with a single dose (Anagen induction animal experiment) - The alopecia areata animal model has excellent effect even at 10 days intervals, and also has excellent effect even at low concentrations. - No toxicity from animal testing results so far 3. Can also be used for androgenic alopecia and alopecia areata: possibility of double effects for 2 indications - Simultaneous effects of androgenic alopecia and alopecia areata (Securing prior research) - Production of humanized antibodies, demonstrating the efficacy of humanized antibodies in androgenic alopecia and alopecia areata models. 4. Novelty of MOA: Clear target identification - During the catagen phase of hair cycling, the epidermal fibroblasts secrete EPI-005 target(CXCL12)-->Activating CXCR4 and STAT3/5 present in hair follicles to induce hair loss ➡ CXCL12 neutralizing antibody promotes the extension of the anagen phage and entrance into the anagen phage, thereby preventing hair loss and increasing the hair growth effect.
Development Stage	Lead
Route of Administration	SC injection (scalp)

kddf_bd@kddf.org
KDDF Business Development Team

KDDF
Korea Drug Development Fund