

## IL-17RA Protein, Human (320a.a, HEK293, His)

Cat. No.:	HY-P73179
Synonyms:	Interleukin-17 receptor A; IL-17RA; CDw217; CD217; IL17R
Species:	Human
Source:	HEK293
Accession:	Q96F46 (M1-W320)
Gene ID:	23765
Molecular Weight:	52-60 kDa

### PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 $\mu$ m filtered solution of PBS, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/ $\mu$ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

Interleukin-17 receptor A (IL-17RA), also known as CD217, is a cytokine receptor that binds interleukin 17. IL-17RA is a proinflammatory cytokine secreted by activated T-lymphocytes. IL-17 receptor family is composed of five members from IL-17RA to IL-17RE. The subunit IL-17RA is ubiquitous and is a common co-receptor subunit for other members of the IL-17 family. The IL-17RA gene is mapped to human chromosome 22q11.1 and is expressed ubiquitously and exhibits a broad tissue distribution<sup>[1][2]</sup>.

The amino acid sequence of human IL17RA protein has low homology between mouse and rat IL-17A protein. IL-17A, the prototypic T helper 17 (Th17) cytokine, is important in host defense at mucosal surfaces, but also functions as an important inflammatory mediator involved in the pathogenesis of many autoimmune diseases, including rheumatoid arthritis (RA). IL-17RA pairs with IL-17RC to bind either IL-17A or IL-17F as covalent homodimers, but also IL-17A/IL-17F as heterodimers. IL-17RA offers protection against pathogenic infection as it plays an important role in host defence mechanism. IL-17A activates downstream cellular signaling through IL-17 receptor (IL-17R) complex comprised of the IL-17A receptor (IL-17RA) and IL-17C receptor (IL-17RC) subunits with higher affinity to IL-17RA. The IL-17A/IL-17RA axis has been implicated in the pathogenesis of several acute and chronic airway and lung diseases. However, the association of IL-17RA with other members of the IL-17 receptor family shifts the affinity toward other members of the IL-17 family. Indeed, combination of IL-17RA with IL-17RB binds IL-17E as covalent homodimers. Besides, IL-17RA can also associate with IL-17RE

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to bind IL-17C as homodimers. However, the involvement of IL-17RA is not compulsory, as IL-17RB forms homodimers to target IL-17B as covalent homodimers<sup>[1][2][3]</sup>.

IL-17RA play a pathogenic role in many inflammatory and autoimmune diseases such as rheumatoid arthritis. IL-17RA involved in antimicrobial host defense and maintenance of tissue integrity. It has been demonstrated in infectious models in which neutrophils are crucial for host defense, that IL-17RA deficiency results in reduced chemokine levels and reduced neutrophil numbers, and increased susceptibility to infection. In addition, IL-17RA is expressed by diverse intestinal cell types, and therapies targeting IL-17A induce adverse intestinal events, suggesting additional tissue-specific functions. Defects in IL17RA are the cause of familial candidiasis type 5 (CANDF5). IL17RA deficiency might lead to the risk of chronic mucocutaneous candidiasis<sup>[1][2][3][4]</sup>.

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## REFERENCES

- [1]. Stéphane Nesmond, et al. Characteristic Pattern of IL-17RA, IL-17RB, and IL-17RC in Monocytes/Macrophages and Mast Cells From Patients With Bullous Pemphigoid. *Front Immunol.* 2019 Sep 11;10:2107.
- [2]. Xun Lin, et al. IL-17RA-signaling in Lgr5+ intestinal stem cells induces expression of transcription factor ATOH1 to promote secretory cell lineage commitment. *Immunity.* 2022 Feb 8;55(2):237-253.e8.
- [3]. Laura Green, et al. Chronic Candidiasis in Children. *Curr Allergy Asthma Rep.* 2017 May;17(5):31.
- [4]. Jayasri Das Sarma, et al. Functional interleukin-17 receptor A is expressed in central nervous system glia and upregulated in experimental autoimmune encephalomyelitis. *J Neuroinflammation.* 2009 Apr 28;6:14.
- [5]. Erika A Rickel, et al. Identification of functional roles for both IL-17RB and IL-17RA in mediating IL-25-induced activities. *J Immunol.* 2008 Sep 15;181(6):4299-310.
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