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# IL-24: physiological and supraphysiological effects on normal and malignant cells.

[Margue C](https://www.ncbi.nlm.nih.gov/pubmed/?term=Margue%20C%5BAuthor%5D&cauthor=true&cauthor_uid=20712572)1, [Kreis S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Kreis%20S%5BAuthor%5D&cauthor=true&cauthor_uid=20712572).

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### Abstract

IL-24, previously known as melanoma differentiation antigen 7 (mda-7), is a member of the IL-10 family of cytokines and is mainly produced by Th2 cells and activated monocytes. Binding of IL-24 to either of its two heterodimeric receptors IL-20R1/IL-20R2 and IL-22R/IL-20R2 triggers phosphorylation and consequently activation of STAT3 and/or STAT1 in target tissues such as lung, testis, ovary, keratinocytes and skin. There is accumulating evidence that skin represents a major target tissue for IL-24 and related cytokines such as IL-19, -20, and -22. To date, the physiological properties of IL-24 are incompletely understood but available data indicate that it affects epidermal functions by increasing proliferation of dermal cells, suggestive of a possible role in psoriasis. However, the initial interest in IL-24 did not arise from its physiological signalling properties through its cognate receptors but rather because this cytokine has been reported to efficiently kill cancer cells independent of receptor expression and Jak-STAT signaling. These potentially intriguing properties have led to the development of adenovirally expressed IL-24, which was reported to induce selective cancer cell death in many different malignancies by activation or deactivation of a continuously growing list of distinct signaling pathways without harming surrounding healthy cells. In the present review we critically revisit and discuss the potential of IL-24 to become a selective and cancer cell-specific oncolytic drug and put these tentative properties into context with recent data on the physiological properties of this cytokine.

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