Interleukin 24 (IL-24), also known as mda-7 (melanoma differentiation associated gene-7), is a member of the IL-10 family of helical cytokines. The IL-24 gene encodes a precursor protein of 207 amino acids (aa) that contains a 48 aa signal sequence and an 18 kDa, 158 aa mature segment. There are three potential N-linked glycosylation sites, at least one of which is used. When secreted, IL-24 is a 35 - 40 kDa phosphorylated glycoprotein that apparently can exist as either a monomer or dimer. It is suggested that glycosylation is essential for activity. Mature human IL-24 shares 69% aa sequence identity with mouse and rat IL-24. Human IL-24 is also active in rodent systems. Cells known to express IL-24 include B cells, CD4+ T cells, NK cells, lymph node dendritic cells, monocytes, melanocytes, and melanoma cells. Functionally, IL-24 has diverse activities. At low concentrations on monocytes, it induces type I proinflammatory cytokines such as IFN-γ, IL-1β, IL-12 and TNF-α. At high concentrations, it is a strong inducer of apoptosis in tumor cells, but not normal cells. IL-24 also has anti-angiogenic properties. It directly binds IL-24 receptors on endothelial cells, activating STAT3 and blocking their differentiation. IL-24 binds and signals through two heterodimeric receptor complexes. One complex is the combination of IL-20 Rα and IL-20 Rβ, which is shared with IL-19 and IL-20. The second complex is a combination of IL-22 R and IL-20 Rβ, which is shared with IL-20.

References: