P012 Eppin: Development as a potential anti-inflammatory agent

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In 2001, the discovery of eppin (*ep*ididyal *p*rotease *in*hibitor) was reported. This 133 amino acid protein has two consensus inhibitor domains: the Whey Acidic Protein (WAP) motif and the Kunitz motif. The eppin gene is located on human chromosome 20 close to the protease inhibitors and antimicrobial proteins, elafin and SLPI. Preliminary antibacterial work suggested that eppin permeabilises the outer and inner membrane of the bacterial cell. Beyond this, very little functional information is available for eppin. The presence of two potential protease inhibitory domains in eppin makes it an attractive target for the development of anti-inflammatory agents. However, in order to do this we need to know more about the structure and function of this molecule and its domains. In the present study, the gene sequences of the individual motifs of eppin, and the intact eppin were amplified by PCR. Expression vectors were constructed for each of the target molecules and proteins were expressed in and purified from *E. coli* cells. Anti-bacterial and protease inhibitor assays have been used to assign biochemical functions to the two domains of eppin.