Introduction

Description

Many eukaryotic cells surround themselves with very soft and hydrated coats that are rich in polysaccharide matrix. Such coats play a fundamental role in regulating the interaction of cells with their environment. A crucial component of the coats is hyaluronan (HA), a regular, linear polysaccharide of the glycosaminoglycan family of typically several micrometers in contour length. The coats do also contain a number of HA? binding proteins that engage in the self-assembly of HA into relatively thick, soft and highly hydrated matrix.

An example of such pericellular coats is the cumulus cell-oocyte complex (COC) matrix, an extended viscoelastic coat that grows around oocytes just before ovulation and that is required for fertilization. The secreted product of tumor necrosis factor-stimulated gene-6 (TSG-6), inter-?-inhibitor (I?I) and pentraxin 3 (PTX3) proteins were shown to be crucial for COC matrix stabilization, but how they form a functional and stable HA matrix remains poorly understood.