SHORT REPORT

Proposal for a unified CCN nomenclature

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A proposal is put forth to unify the nomenclature of the CCN family of secreted, cysteine rich regulatory proteins. In the order of their description in the literature, CCN1 (CYR61), CCN2 (CTGF), CCN3 (NOV), CCN4 (WISP-1), CCN5 (WISP-2), and CCN6 (WISP-3) constitute a family of matricellular proteins that regulate cell adhesion, migration, proliferation, survival, and differentiation, at least in part through integrin mediated mechanisms. This proposal is endorsed by the International CCN Society and will serve to eliminate confusion from the multiple names that have been given to these molecules.

The members of a family of cysteine rich matricellular proteins have recently emerged as multifunctional regulators that control diverse cellular processes and play important roles in vascular and skeletal development.[1] Known as CCN proteins, members of this protein family are characterised by an N-terminal secretory signal, followed by four structural domains with partial sequence identity to insulin-like growth factor binding proteins, von Willebrand factor type C repeat, thrombospondin type 1 repeat, and a C-terminus with sequence similarity to the C-termini of von Willebrand factor, mucin, and slit.[2–5] The acronym CCN comes from the first three members of the family reported, namely CYR61 (cysteine rich 61), CTGF (connective tissue growth factor), and NOV (nephroblastoma overexpressed).[6–8] Other members of the CCN family have also been identified, bringing the total number of known CCN proteins to six.[9]

Genes encoding CCN proteins have also been identified in other studies, either based on their differential expression in various tissues, tumour cell lines, or upon induction by growth factors or morphogens. Consequently, a variety of other names have been assigned to these genes that reflected the context of these studies. During the international workshop on the CCN family of genes in Saint-Malo, France, it was recognised that a unified nomenclature will serve to eliminate confusion in the literature.[1] A consensus was reached to propose a unifying nomenclature for the CCN family, numbering them CCN1 through to CCN6 in the order in which they were described in the literature. Thus, CYR61 will be designated CCN1, CTGF as CCN2, NOV as CCN3, and WISP-1–3 as CCN4–6 (table 1). This proposed nomenclature is endorsed by the International CCN Society (http://www.ccnsociety.jussieu.fr). The board of the International CCN Society will be acting as a nomenclature committee for the attribution of CCN names to new member genes of the CCN family yet to be discovered.

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Table 1 Nomenclature proposal

Proposed name	Names used previously
CCN1	CYR61 (human, mouse, xenopus), CEF10 (chicken), IGFBP-rP4 (human),βIG-M1 (mouse), CTGF-2, IGFBP10 (human), angiopro
CCN2	CTGF (human, mouse, chicken, xenopus), βIG-M2 (mouse), FISP12 (mouse), IGFBP-rP2 (human), Hcs24 (human), IGFBP8 (human), HBGF-0.8, ecogenin (human)
CCN3	NOV (human, rat, chicken, mouse, quail), IGFBP-rP3 (human), IGFBP9 (human), NOVH (human), NOVm, mNOV (mouse), xNOV (xenopus)
CCN4	WISP-1 (human), ELM-1
CCN5	WISP-2 (human), CTGF-L, CTGF-3, HICP, rCOP-1 (rat)
CCN6	WISP-3 (human)

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