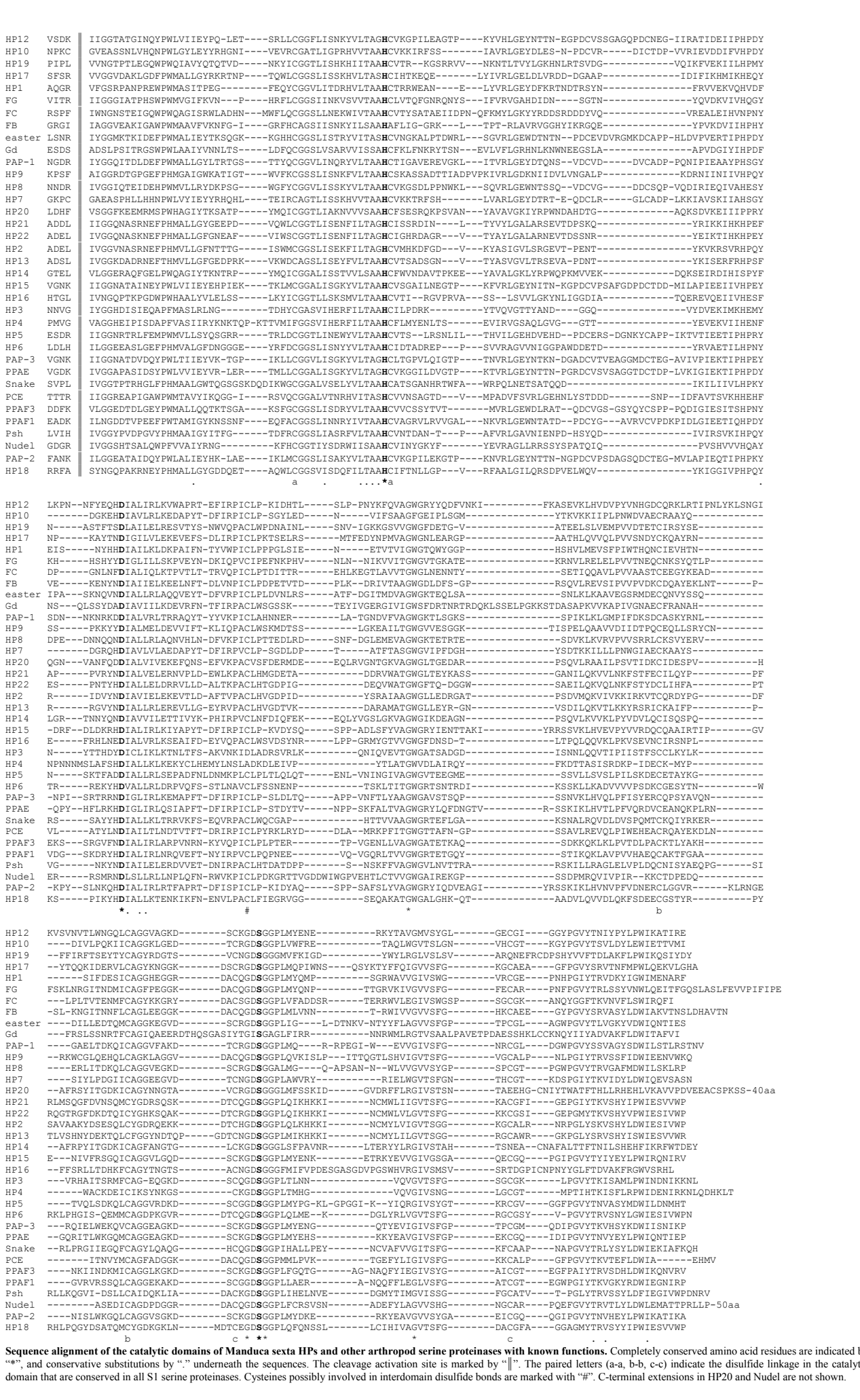

**Sequence alignment of the catalytic domains of Manduca sexta HPs and other arthropod serine proteinases with known functions.** Completely conserved amino acid residues are indicated by "*", and conservative substitutions by "." underneath the sequences. The cleavage activation site is marked by "‖". The paired letters (a-a, b-b, c-c) indicate the disulfide linkage in the catalytic domain that are conserved in all S1 serine proteinases. Cysteines possibly involved in interdomain disulfide bonds are marked with "#". C-terminal extensions in HP20 and Nudel are not shown.