IDENTIFICATION AND CHARACTERIZATION OF PROTEINS THAT INTERACT WITH HUMAN SEPTINS 6 AND 8

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The septins bind GTP via their central GTPase domain and have been functionally implicated in diverse cellular processes including cell division, exocytosis and apopotosis. In humans 13 different septins have been described to date, which differ in their N- and C-terminal regions, whereas their GTP-binding domains are highly conserved. They are known to engage in homo- and heterooligomerization. This way they can form protein filaments, which have been implicated in transport processes. On the other hand it was suggested that septins maybe involved in cellular signaling and regulation. The septin GTPase domains are very similar to those found in the signaling proteins of the Ras family, which switch confirmations and interact with distinct protein partners depending whether bound to GTP or GDP. Septins may therefore serve as scaffolds for the interaction of other proteins. We set out to clone human septins 6 and 8 in the yeast “bait” vector pBTM116 in order to identify septin interacting proteins. Human fetal brain and leukocyte cDNA libraries were screened with the septin 6 “bait”. We were able to identify septins already known to engage in hetero-oligomeriztion with septin 6 as well as new ones. Furthermore, we identified several proteins associated with the ubiquitin-proteasomes pathway and most interestingly some proteins involved in signaling process. **Support: FAPESP, CNPq, CAPES and LNLS**