

Abstract/Session Information for Program Number 638B

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ced-7 Might Be Involved in *ced-3*-Independent Programmed Cell Death. **Fang Xie**, Bob Horvitz. HHMI, Dept. Biology, MIT, Cambridge, MA.

ced-3 encodes a member of the caspase family of cysteine proteases and is essential for almost all programmed cell death in *C. elegans*. However, a quantitatively low level of programmed cell death still appears to occur in the absence of CED-3 protease function. Such *ced-3*-independent cell death is indicated by the presence of unengulfed cell corpses in heads of L1 larvae containing strong loss-of-function mutations in both *ced-3* and *ced-1*. (*ced-1* is necessary for cell-corpse engulfment.) To investigate if any known cell-death genes are involved in this *ced-3*-independent death, we are examining whether mutations in other *ced* genes affect the number of corpses in *ced-1; ced-3* animals. To date, we have observed that loss-of-function mutations in *ced-7*, and possibly in *ced-9* and *ced-4*, decrease the number of corpses in heads of L1 triple mutants. Thus, these genes might play a role in *ced-3*-independent killing.

In addition to CED-3, CED-4S, one of the two alternatively spliced *ced-4* products, also has killing activity. By overexpressing CED-4S in *ced-1; ced-3* animals, we observed that CED-4S can induce cell death in the absence of CED-3. Overexpression of another cell death activator, EGL-1, however, cannot induce cell death in a *ced-1; ced-3* background.

We are now using electron microscopy and Annexin V and TUNEL (TdT-mediated dUTP digoxigenin Nick End Labeling) staining to better characterize *ced-3*-independent cell death. Annexin V specifically labels apoptotic cells by binding to phosphatidylserine exposed on cell surface, while TUNEL labels free DNA ends in apoptotic cells. We are also examining if the caspase homologs *csp-1*, *csp-2* and *csp-3* are involved in *ced-3*-independent cell death.

Session Information**Session Title:** CELL DEATH AND NEURODEGENERATION**Session Type:** POSTER, **Session Time:** Monday-Wednesday**Location:** ACKERMAN GRAND BALLROOM**Abstract Information****Poster Board Number:** 638B, **Presentation Time:** TUE, JULY 1, 2003 1:30-3:00PM**Title:** CED-7 MIGHT BE INVOLVED IN CED-3-INDEPENDENT PROGRAMMED CELL DEATH.**Author:** XIE,FANG;* HORVITZ,BOB.**Keywords:** KW06:09 - CELL DEATH AND NEURODEGENERATION; CELL DEATH[Print](#) [Close window](#)