

SAXS and X-ray crystallographic studies of the assembly of the CARD promoter of the apoptosome

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In the apoptotic signaling pathway, the human apoptosome is responsible for recruiting and subsequently activating procaspase-9. The recruitment of procaspase-9 is mainly via the homotypic 1:1 CARD-CARD interaction between the Apaf-1 of the apoptosome and procaspase-9. How the recruitment could lead to the activation of procaspase-9 remains unclear.

Since the apoptosome contains seven Apaf-1 molecules, a higher order assembly between the Apaf-1 and procaspase-9 CARD, called the CARD-CARD disk, was expected. The first question that need to be answered is how the Apaf-1 and procaspase-9 CARDS assemble the CARD-CARD disk, especially on the heptameric apoptosome platform.

Here we solved the X-ray structure of the CARD-CARD assembly between Apaf-1 and procaspase-9 CARD and utilized SAXS data to help us elucidate the composition and assembling mechanism of the CARD-CARD disk (Figure 1).

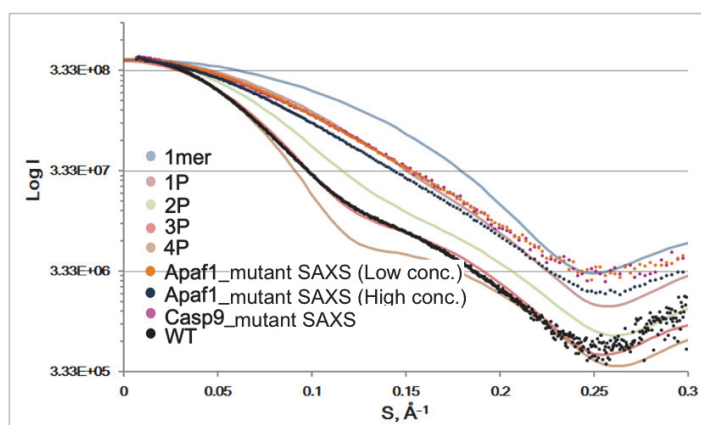


Figure 1. Comparison of the SAXS data with the curves from different models.

References

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