

OBITUARY

Open Access



# Andrew H. Wyllie, a pioneer in the field of apoptosis

Zahra Zakeri<sup>1</sup> and Richard A. Lockshin<sup>2\*</sup>

## Abstract

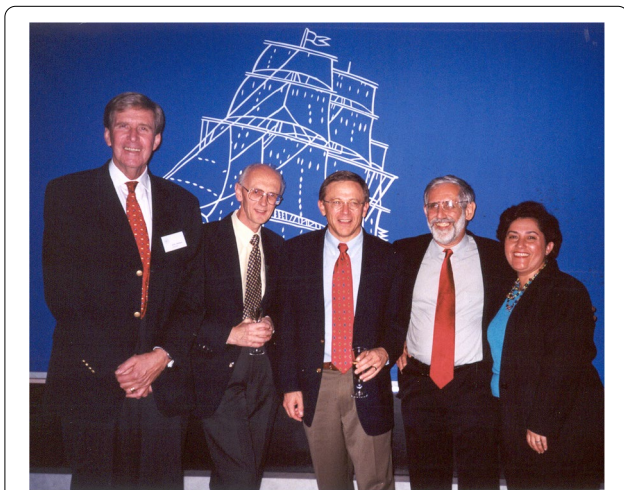
We mourn, and briefly describe the life and contributions of, Andrew H. Wyllie, who was a co-author of the first paper to describe apoptosis, and a primary proponent of the concept.

**Keywords:** Apoptosis, DNA ladder, Andrew Wyllie

With sorrow we announce the passing of Andrew H Wyllie (Fig. 1) on May 26, at age 78. Wyllie was a giant in the field of cell death, having, in a famous paper in 1972 announced, with John Kerr and Alastair Currie, the existence of apoptosis as an unique, widespread, and

important biological phenomenon [1] Today apoptosis is considered a fundamental process in early development [2], at many points and especially the central nervous system. It is also a primary aspect of homeostasis. Many cancers derive from failure of the regulation of apoptosis. Aggressive treatment of many diseases includes either trying to prevent apoptosis, as in aging of the immune system and brain, or protecting against the worst ravages of viruses such as Covid-19; or in trying to reactivate apoptotic pathways in many types of cancer.

Wyllie later emphasized the characteristics and the importance of apoptosis [3]. In a third and fourth important papers, he emphasized the relationship of the ladder of fragmented DNA that characterized apoptosis, thus providing an inexpensive and easily reproducible means of assessing apoptosis and allowing other researchers to look for the phenomenon [4, 5] (Fig. 2). At the time of his death, he had been cited over 70,000 times, and the term apoptosis figured in over 900,000 publications. He was a member of many honorary societies. He died at home, surrounded by his family. His memory will be cherished.

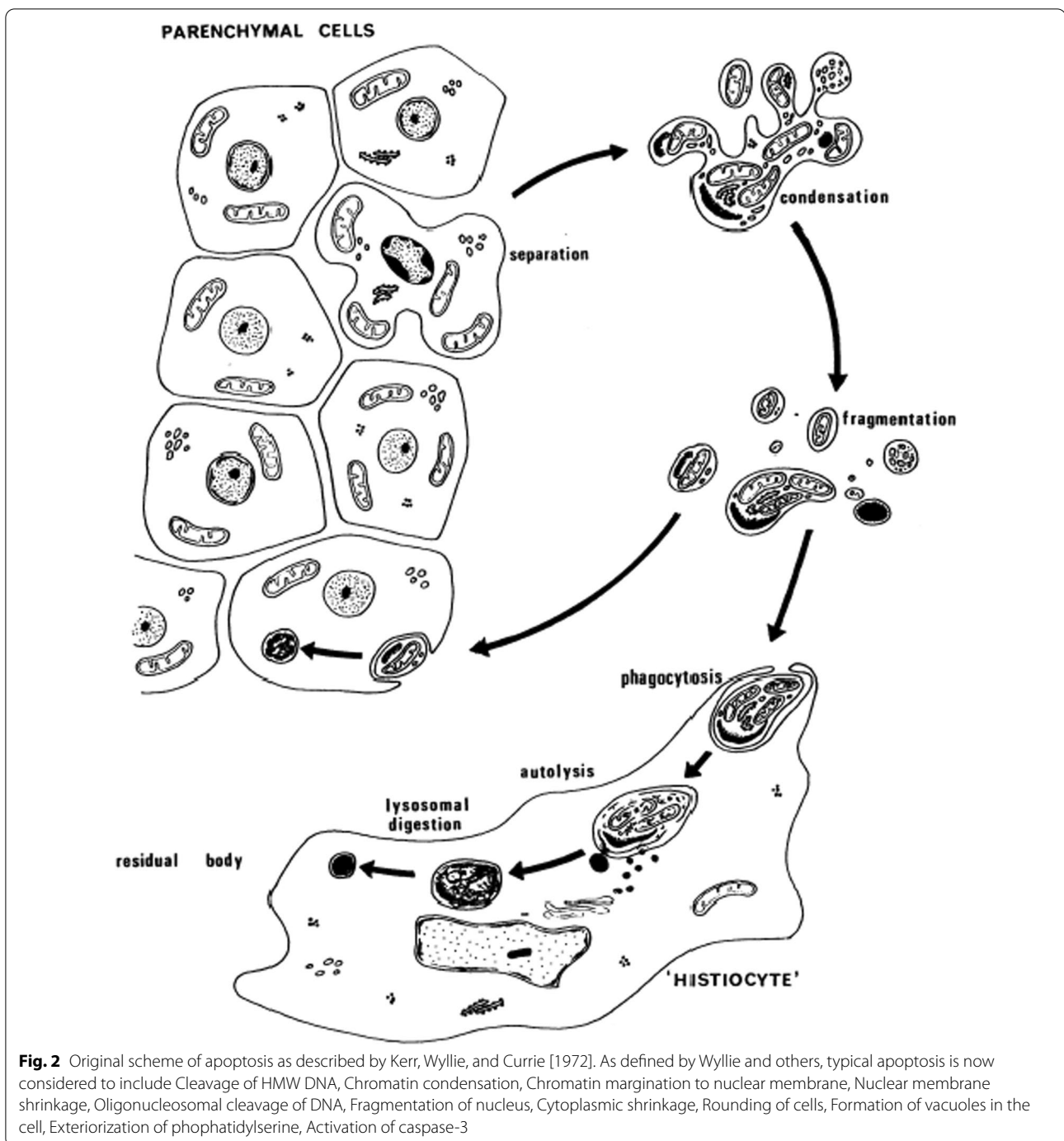


**Fig. 1** Andrew H. Wyllie at a Nobel Conference in 2001. Left to right: Sten Orrenius, Andrew Wyllie, Stan Korsmeyer, Richard Lockshin, Zahra Zakeri

\*Correspondence: rlockshin@gmail.com

<sup>2</sup> Department of Biological Sciences, St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439, USA  
Full list of author information is available at the end of the article



**Author contributions**

Both authors contributed equally to the writing of this paper. Both authors read and approved the final manuscript.

**Funding**

There is no funding for this article.

**Data availability**

Figure 2 is available online at PubMed. Figure 1 is the property of the authors and is available on request.

**Declarations****Competing interest**

The authors have no competing interest.

**Author details**

<sup>1</sup>Department of Biology, Queens College of CUNY, 65-30 Kissena Blvd., Flushing, NY 11367, USA. <sup>2</sup>Department of Biological Sciences, St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439, USA.

Published online: 17 October 2022

**References**

1. Kerr JF, Wyllie AH, Currie AR. Apoptosis: a basic biological phenomenon with wide-ranging implications in tissue kinetics. *Br J Cancer*. 1972;26:239–57. <https://doi.org/10.1038/bjc.1972.33>.
2. Negron JF, Lockshin RA. Activation of apoptosis and caspase-3 in zebrafish early gastrulae. *Dev Dyn*. 2004;231(1):161–70. <https://doi.org/10.1002/dvdy.20124>.
3. Wyllie AH, Kerr JF, Currie AR. Cell death: the significance of apoptosis. *Int Rev Cytol*. 1980;68:251–306. [https://doi.org/10.1016/s0074-7696\(08\)62312-8](https://doi.org/10.1016/s0074-7696(08)62312-8).
4. Wyllie AH. Glucocorticoid-induced thymocyte apoptosis is associated with endogenous endonuclease activation. *Nature*. 1980;284(5756):555–6. <https://doi.org/10.1038/284555a0>. ISSN0028-0836.
5. Arends MJ, Morris RG, Wyllie AH. Apoptosis. The role of the endonuclease. *Am J Pathol*. 1990;136(3):593–608.

**Publisher's Note**

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Ready to submit your research? Choose BMC and benefit from:**

- fast, convenient online submission
- thorough peer review by experienced researchers in your field
- rapid publication on acceptance
- support for research data, including large and complex data types
- gold Open Access which fosters wider collaboration and increased citations
- maximum visibility for your research: over 100M website views per year

**At BMC, research is always in progress.**

Learn more [biomedcentral.com/submissions](https://biomedcentral.com/submissions)

