

CHROMOSOME ABERRATIONS: PAST, PRESENT AND FUTURE

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Spontaneous and induced chromosome aberrations have been studied over more than a century. The involvement of chromosomal changes in "mutations" (de Vries, 1918) and in malignant tumours (Boveri, 1914) was discovered in early 20th century. Spontaneous and radiation induced chromosome aberrations were detected in salivary gland chromosomes of *Drosophila* (Morgan, 1927, Muller, 1928). The resolution of detection of chromosome has depended on the improvement of available techniques. Squash techniques for plant cells, hypotonic treatment followed by air drying enabled to establish the basic concepts of formation of chromosome aberrations following ionizing radiation (Sax, 1938) and chemical mutagens (Evans & Scott, 1960). The development of chromosome banding techniques in 1970's and the fluorescence in situ hybridization (FISH) in 1980's increased the accuracy of detection of different classes aberrations. An over view on the major highlights in the application of these techniques in different areas of chromosome research in the past, present and the future will be presented.