

- [54] ENVIRONMENTALLY CONTROLLED IN VITRO INCUBATOR
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Brackett & Wililams, Fertil. Steril., vol. 19, p. 144 (Nov. 1968).  
 Gwatkin & Haidri, J. Reprod. Fert., vol. 37, p. 127 (Sep. 1974).  
 Quinn & Harlow, J. Exp. Zool., vol. 206, p. 73 (May 1978).  
 Tervit et al., J. Reprod. Fert., vol. 30, p. 493 (Apr. 1972).

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[57] ABSTRACT

An environmentally controlled incubator is described in which the enclosure of the incubator chamber strongly attenuates the transmission of light having wavelengths below about 500 nm for protecting biological materials within the chamber from toxic effects of short wavelength light. The incubator also includes sensors for determining the oxygen and carbon dioxide concentration within the chamber and means for adding carbon dioxide, nitrogen or oxygen to the ambient gas within the incubator in order to maintain the desired levels of carbon dioxide and oxygen. A thermostatically controlled heater and a humidification chamber warm and humidify the gas as it is circulated through the humidification chamber under control of a fan. An airlock is provided to allow biological materials to be placed within or removed from the chamber.

- [56] **References Cited**
- U.S. PATENT DOCUMENTS**
- 3,955,317 5/1976 Gudín ..... 435/284
- 4,111,753 9/1978 Folsom et al. .... 195/126
- 4,301,252 11/1981 Baker ..... 435/290
- 4,572,427 2/1986 Selfridge ..... 236/3

- OTHER PUBLICATIONS**
- Chetkowski et al., J. In Vitro Fertilization and Embryo Transfer, vol. 2, p. 207 (Sep. 1985).
- Auerbach & Brinster, Nature, vol. 217, p. 465 (Feb. 1968).
- Wright et al., J. Anim. Sci., vol. 42, p. 912 (Nov. 1976).

19 Claims, 3 Drawing Sheets

