

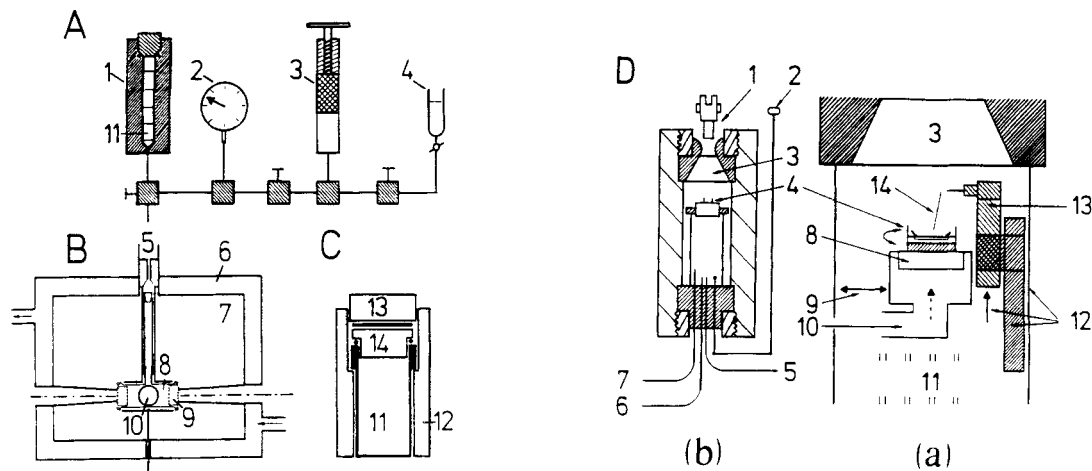


Fig. 1. High-pressure equipment (A) Schematic representation of high-pressure apparatus: 1, autoclave; 2, Bourdon gauge; 3, hydraulic fluid; 4, reservoir for hydraulic fluid. (B) High-pressure transmission and fluorescence cuvette: 5, pressure inlet; 6, thermostating jacket with thermocouple; 7, Cu-Be or stainless steel block; 8, teflon sample cell (volume 2 ml) with silicon hose and stopper; 9, sapphire windows; 10, ultraviolet light guide to monitor fluorescence emission (at right angles to the transmission beam (---)). (C) Flexible teflon container (11) (volume $\approx$ 2 ml for autoclave 1 in A): 12, copper cylinder; 13, screw with steel plate; 14, teflon stopper with rubber O-ring. (D) Patch-clamp recording equipment at helium pressures up to 50 MPa. The patch-clamp recording equipment (a) can be accommodated in a pressure vessel with 15-cm bore (b). The pressurized sample can be moved, illuminated, manipulated with the patch electrode and watched with a long-range binocular microscope: 1, microscope; 2, drive control; 3, window; 4, tissue bath on movable platform; 5, electrical connection; 6, gas connection; 7, light guide; 8, rotating platform; 9, x and y movement; 10, light guide and prism; 11, mechanical linkage to external drives; 12, micrometer vertical drive; 13, pre-amp pressure casing; 14, patch electrode (Macdonald et al., 1989).

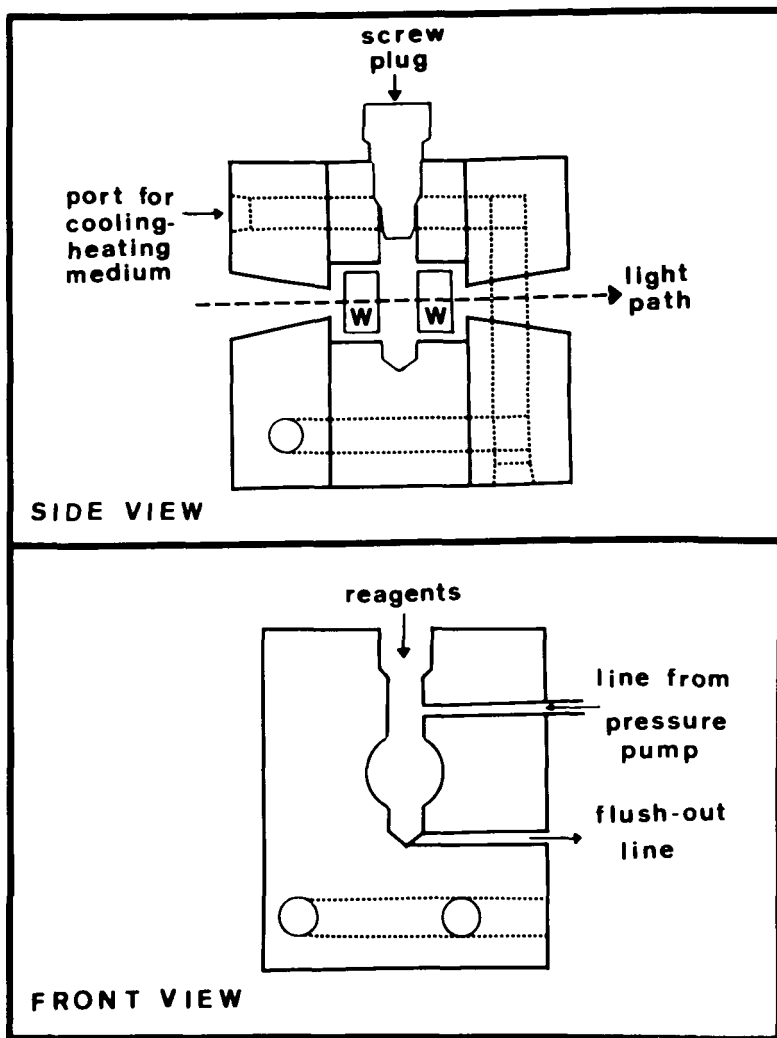


FIG. 1. A simplified diagram of side (upper panel) and front (lower panel) views of the pressure cell employed in these studies. The total volume of the cell is about 5 ml. Windows (labelled W) to the cell were sapphire, UV grade. Temperature control was maintained by circulating water from a Lauda constant temperature bath and circulator. During operation, the cell is closed after addi-

tion of the reaction mixture by screwing in the screw plug (upper panel) "finger-tight." The pressure pump can be connected by either of the two lateral channels leading into the pressure cell (lower panel). The lower channel is basically designed to ease in flushing out the cell contents after each assay.