INTRODUCTION
Polychaetes are one of the best represented groups among marine invertebrates demonstrating a wide variety of life strategies. One reproductive strategy found in many invertebrates and a few vertebrates is the encapsulation of eggs and developing larvae. Encapsulation may be gelatinous or firm leaf-like egg capsules (Thomson, 1936). Although gelatinous egg masses are found in the development of many organisms, only 13.6% of the total polychaetes display this strategy (Wilson, 1991; Guiraud, 1997). Marphysa gravelyi (Southern, 1921) was found in the brackish waters of Pulicat Lake. India is one such polychaete which exhibits encapsulation within jelly mass. Though the larval stages and the protective function of the egg mass of M. gravelyi has been discussed by Aiyar (1933) and Malathi (2011) not much work has been done on the biochemical composition of the egg mass. This study aims to identify the chemical constituents in the jelly mass of M. gravelyi to better understand its physical and biological role and further investigate how well the jelly mass provides a survival advantage to the developing larvae.

MATERIALS AND METHODS

Sample collection
The jelly masses of M. gravelyi were found abundantly in Pulicat Lake (Fig. 1) located 60 km NE of Chennai (13.33° to 13.66° N and 80.23° to 80.27° E). The jelly masses were collected with their stalk by taking the mud to a depth of 15 cm. The mass of the larvae was kept in a microscopical examination to determine the age of the egg mass. The jelly masses of M. gravelyi has four larval stages (Aiyar, 1931). For the present study jelly mass containing stage I protostomephore and stage IV naucrates larva were selected.

Biochemical Analysis
The water content was determined by drying a known weight of jelly mass at 50-60°C for 24 h to constant weight. Ash content was determined by burning pre-weighed specimens in a muffle furnace at 500°C for 4 h. Total carbohydrate (Rose and Daley, 1966), total protein (Bratford, 1976) and total lipid were estimated (Folch et al., 1957) and estimated (Barnes and Blackstock, 1973). The fatty acids in the jelly mass were estimated using gas chromatography and detected by flame ionization. Cholesterol levels (Adams et al., 1976) of jelly mass were determined using 5PTC/Chloroform and Glucose was measured by hexokinase method.

Preparation of extract for antimicrobial activity
The jelly mass was homogenized and then centrifuged at 5°C for 20 minutes at 20,000g. The pellet containing larvae and debris was discarded and the jelly mass was retained. The process was repeated until a clear, larvae-free jelly mass was obtained. The jelly masses were then suspended in 1% w/v sodium azide.

Solubility of Jelly Mass
The solubility of the jelly substance was tested against solvents listed in Table 1.

DISCUSSION
Microscopic examination of the jelly mass showed it to be fibrous. The early stages of the jelly mass contained only fertilized eggs fully lined with yolks and developing embryos, but slow accumulation of different phytoplankton and isolated organisms like ciliates, nematodes and protozoans were found harboured along with the meiobenthic stage of the larvae in the core of the jelly mass. The size of the jelly mass and the length of the stalk were found to be variable. There is a significant relationship between the volume of each jelly mass and the number of larvae. Staining property with Alcian blue stain and metanil yellow with toluidine blue, revealed the general chemical nature of the jelly to be a mucopolysaccharide having the carbohydrate moiety composed of glucosamine. The property of gelatinous nature of the jelly mass of M. gravelyi. The composition of the jelly mass reveals that it contains about 88.5-93.35% of carbohydrates, 5.86% w/w lipids and 2.97% w/w proteins. The fatty acid composition of the jelly mass was characterized by the predominance of monounsaturated fatty acids (>50%) and the absence of saturated fatty acids. The results of the bioassay showed that the gelatinous mass extracts at different concentrations had some antimicrobial activity against bacteria such as Pseudomonas aeruginosa, Vibrio parahaemolyticus, Vibrio alginolyticus, and Pseudomonas aeruginosa, Vibrio parahaemolyticus, and E. coli. The results of the antimicrobial bioassay further supported the use of this material as a source of potential natural products with antimicrobial activity. The presence of various solvents treatment was advantageous to the survival of the species on the species in the larvae in the jelly mass. The organic solvents present in the jelly mass of meiobenthic larvae as compared to the early stages of larval development in inland, which may be due to the presence of specific organics in the inside and on the outer surface of the egg mass. The presence of various solvents was found to be beneficial. Further, this study is needed to better understand this observation. It is interesting to note that spawning of eggs in gelatinous masses is exhibited only by M. gravelyi in the littoral habitats of Pulicat Lake. This study presents several advantages including protection against physical stresses, predatory and bacterial attack (Peshutin, 1979; 1981) and often anti-fungal benefits. The jelly material of M. gravelyi performs the important task of formation, aggregation, protecting larval development and defense of larvae.