In the family of paramyxoviridae, measles virus, is highly pleomorphic and infectious virus. Measles virus is enveloped virus that enclose nucleocapsid composed of the ssRNA genome and the nucleoprotein, matrix protein and has two types of glycoproteins (fusion and attachment). It is positively necessary to early diagnosis and proper treatment, because it has high infectivity. So, here we study to more effectively detect of measles virus components as like protein F, M and protein N using immuno-gold labelling (IGL) for lower leveled virus particles (Fig. 1). We have used conventional negative staining method to identify the virus particle in lysate of measles virus-infected cells and used IGL method to detection of the biomarker (protein F, M and N). For IGL analysis of viral components, carbon-film supported nickel grids were glow-discharged and incubated on the cell lysate drops from Triton X-100 and ultrasound. After immuno-gold labelling and the stained grids were observed with an Libra-120 transmission electron microscope at 120kV. We have observed the structure of the each viral component (Fig. 2) and confirmed the presence of biomarkers by indicated gold particles (Fig. 3). In this results, we observed that protein F is distributed in the surface of the virus particles and protein M is located in the bundle of complexify protein. However, protein N is coupled to the linearly arrayed proteins. More improved IGL technique may be useful for detection and identification of viral biomarkers in diagnosis.

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Fig. 1: Schematic diagram of the IGL method for detection of viral components.

Fig. 2: Negative stained TEM images of component of measles virus.

Fig. 3: IGL images for anti protein F(A), protein M(B) and protein N(C). Scale bar=200nm.