$$\int dt' \left[\frac{\delta}{\delta \eta(t')}\right]^2 \eta(t)$$

$$= \int dt' \frac{\delta}{\delta \eta(t')} \left[\frac{\delta \eta(t)}{\delta \eta(t')} + \eta(t) \frac{\delta}{\delta \eta(t')}\right]$$

$$= \int dt' \left\{ \frac{\delta^2 \eta(t)}{\delta \eta(t') \delta \eta(t')} + \frac{\delta \eta(t)}{\delta \eta(t')} \frac{\delta}{\delta \eta(t')} + \frac{\delta \eta(t)}{\delta \eta(t')} \frac{\delta}{\delta \eta(t')} + \eta(t) \left[\frac{\delta}{\delta \eta(t')}\right]^2 \right\}$$

$$\frac{\delta \eta(t)}{\delta \eta(t')} = \lim_{\varepsilon \to 0} \frac{[\eta(t) + \varepsilon\, \delta(t - t')] - \eta(t)}{\varepsilon}$$

$$= \delta(t - t')$$

$$\frac{\delta^2 \eta(t)}{\delta \eta(t') \delta \eta(t')} = \frac{\delta\, \delta(t - t')}{\delta \eta(t')} = 0$$

$$= 2 \frac{\delta}{\delta \eta(t)} + \int dt' \eta(t) \left[\frac{\delta}{\delta \eta(t')}\right]^2$$

$$= \frac{-i\hbar}{m\alpha} \int D\eta\, \overline{\Phi[\eta]}\, \frac{\delta}{\delta \eta(t)} \Phi[\eta]$$