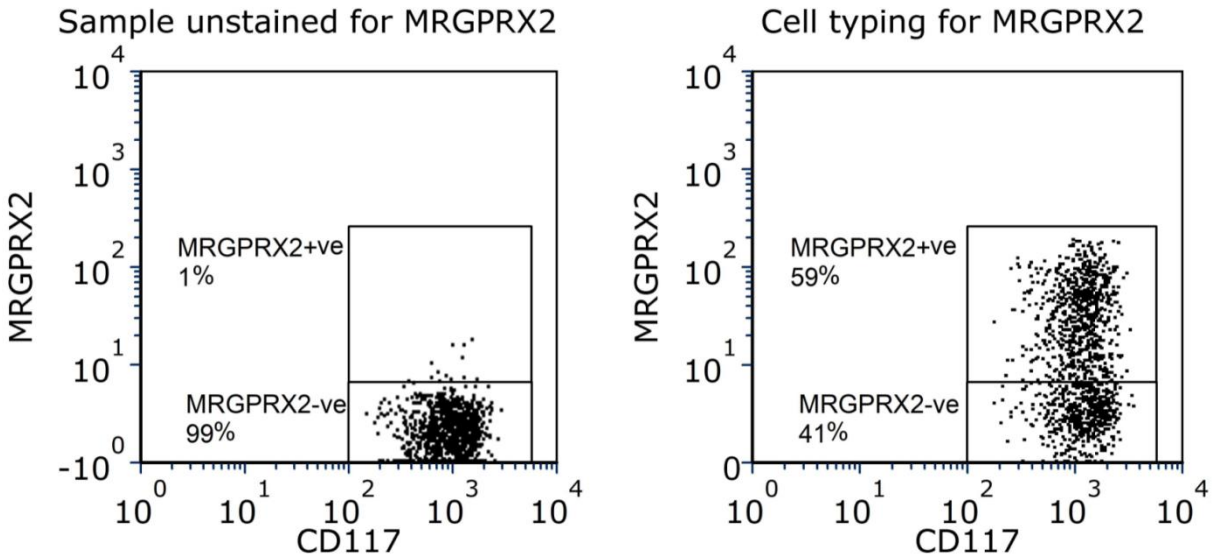
SUPPLEMENTARY MATERIAL

Figure 1. Representative plot for the MRGPRX2 expression on PBCMCs.



Peripheral blood cultured mast cells (PBCMCs) are defined as $CD117^{+ve}CD203c^{+ve}$ cells. PBCMCs harbour two subpopulations: cells with surface expression ofMRGPRX2 ($MRGPRX2^{+ve}$) and cells without expression ofMRGPRX2 ($MRGPRX2^{-ve}$).

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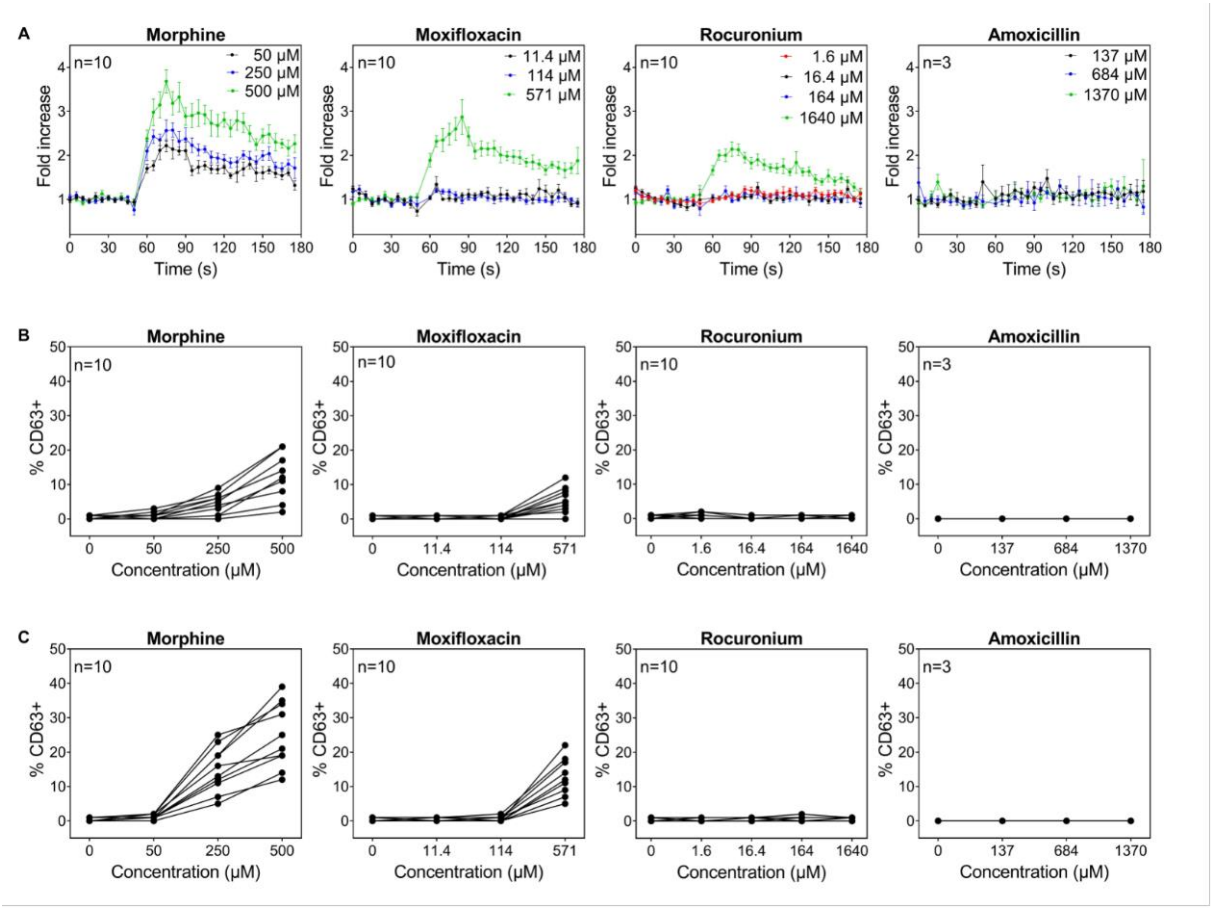
Figure 2. Dose-response curves for changes in intracellular calcium and CD63expressionin PBCMCs.



(A) Dose-response curves of intracellular calcium levels. **(B)** Dose-response curves of CD63 up-regulation after 3 min of stimulation or **(C)** after 20 min of stimulation. Attempts to increase the rocuronium concentration revealed to be cytotoxic.

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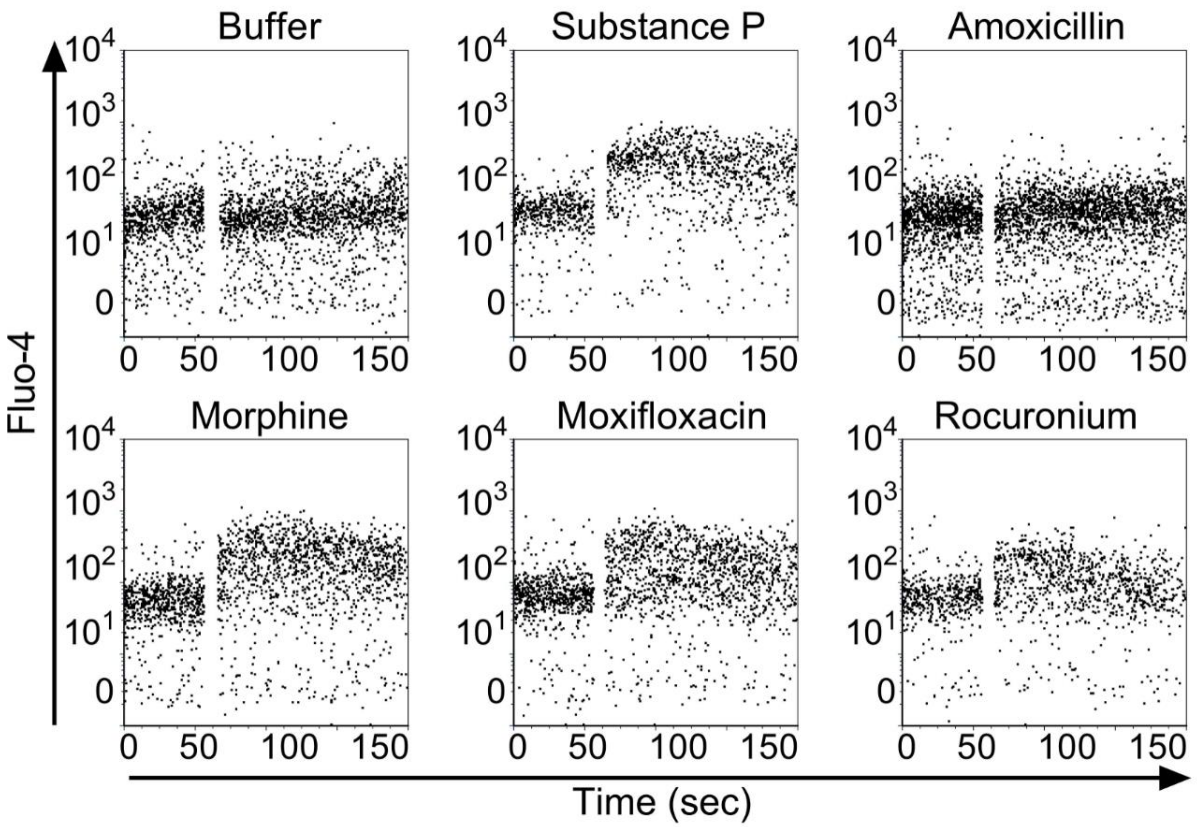
Figure 3. Representative plots for intracellular calcium imaging in PBCMC.



PBCMCs were, after 50 sec, stimulated with buffer, substance P (74 µM), amoxicillin (1370 µM), morphine (500 µM), moxifloxacin (571 µM) or rocuronium (1640 µM).

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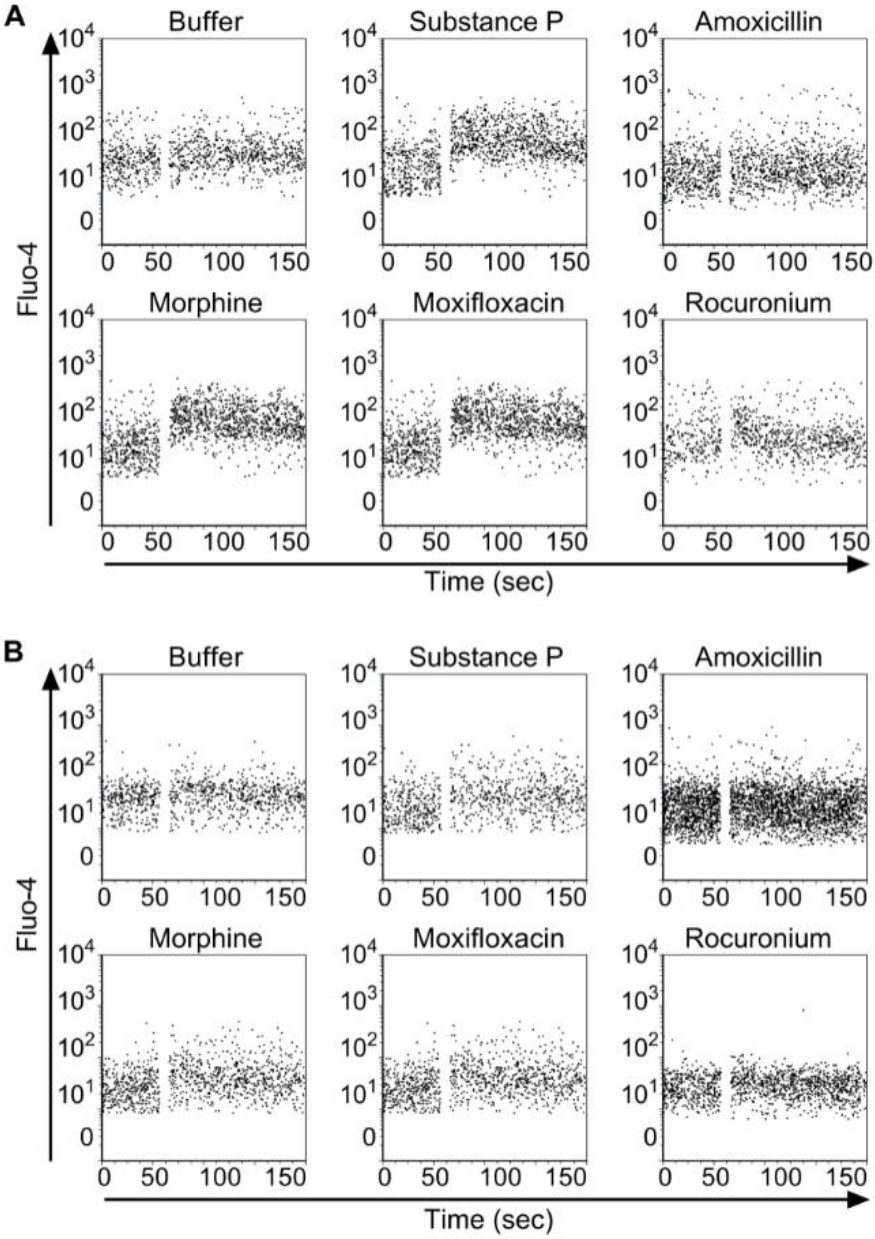
Figure 4. Representative plot for intracellular calcium imaging in MRGPRX2^{+ve} (A) and MRGPRX2^{-ve} (B) subpopulations.



PBCMC samples were (after 50 sec) incubated with buffer, the natural ligand of MRGPRX2 substance P (74 µM), amoxicillin (1370 µM), morphine (500 µM), moxifloxacin (571 µM) or rocuronium (1640 µM).

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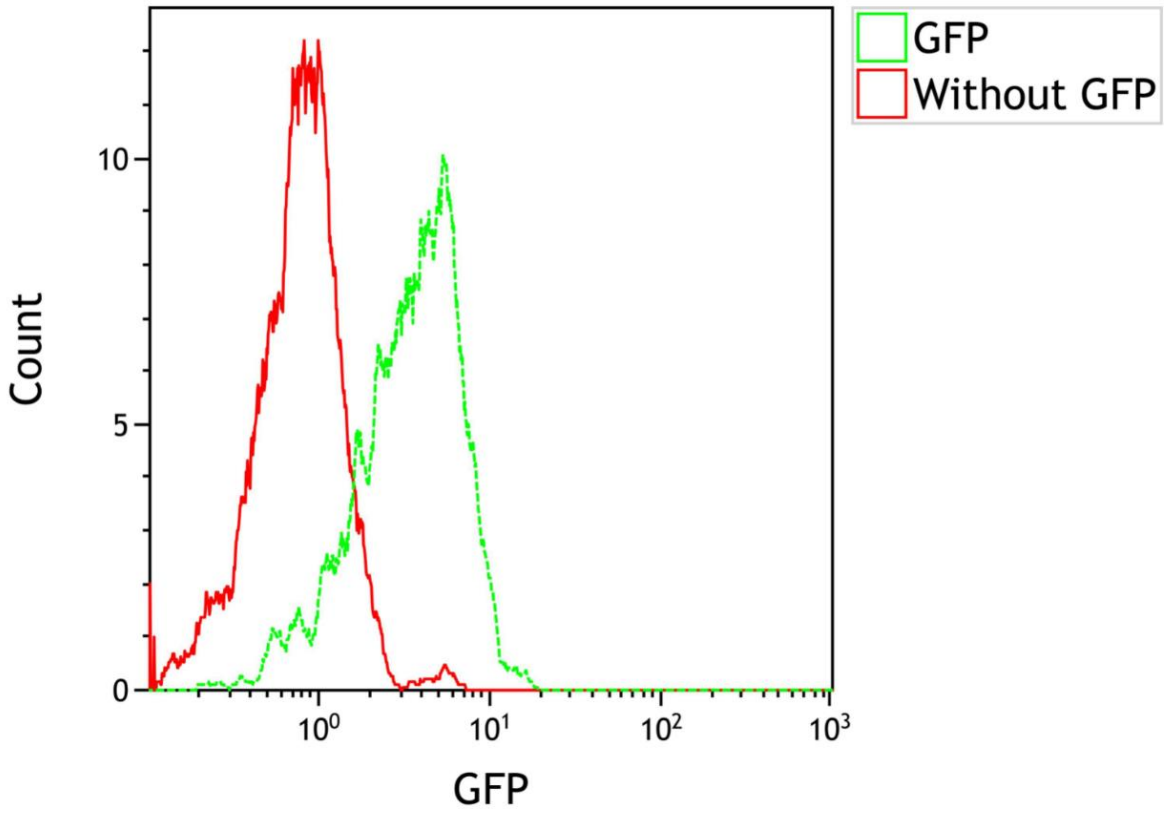
Figure 5. Representative plot of the transfection efficiency using enhanced green fluorescent protein (EGFP) mRNA.



PBCMCs areelectroporated with (green dot line) or without (red full line) EGFP mRNA as a surrogate for transfection efficiency of RNA electroporation. 24h after EGFP expression is analyzed using flow cytometry.

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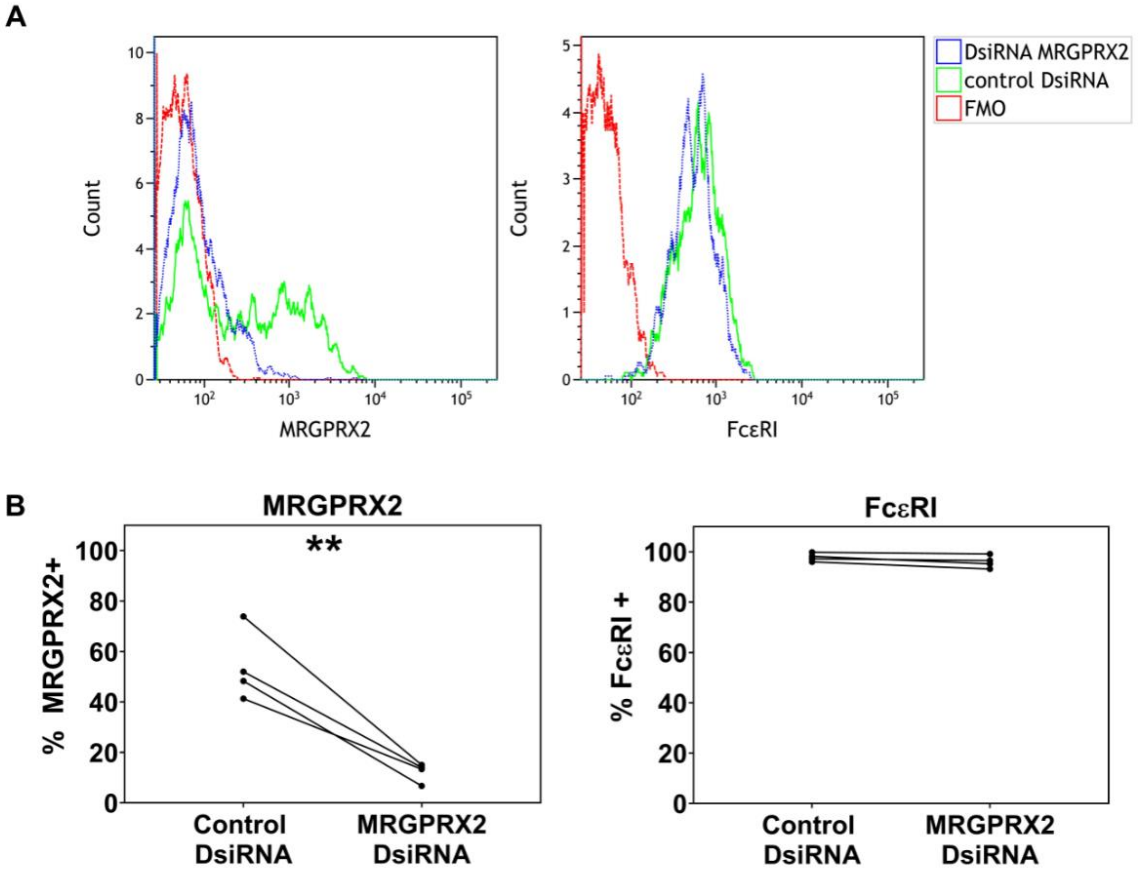
Figure 6. Silencing of the MRGPRX2-receptor after electroporation with anti-MRGPRX2 DsiRNA.



(A) Representative plots or **(B)** a comparison of the surface expression of MRGPRX2orFcεRI between PBCMC electroporated with non-targeting DsiRNAorDsiRNA specific for MRGPRX2.In all experiments, n=4. $p < 0.01$**.

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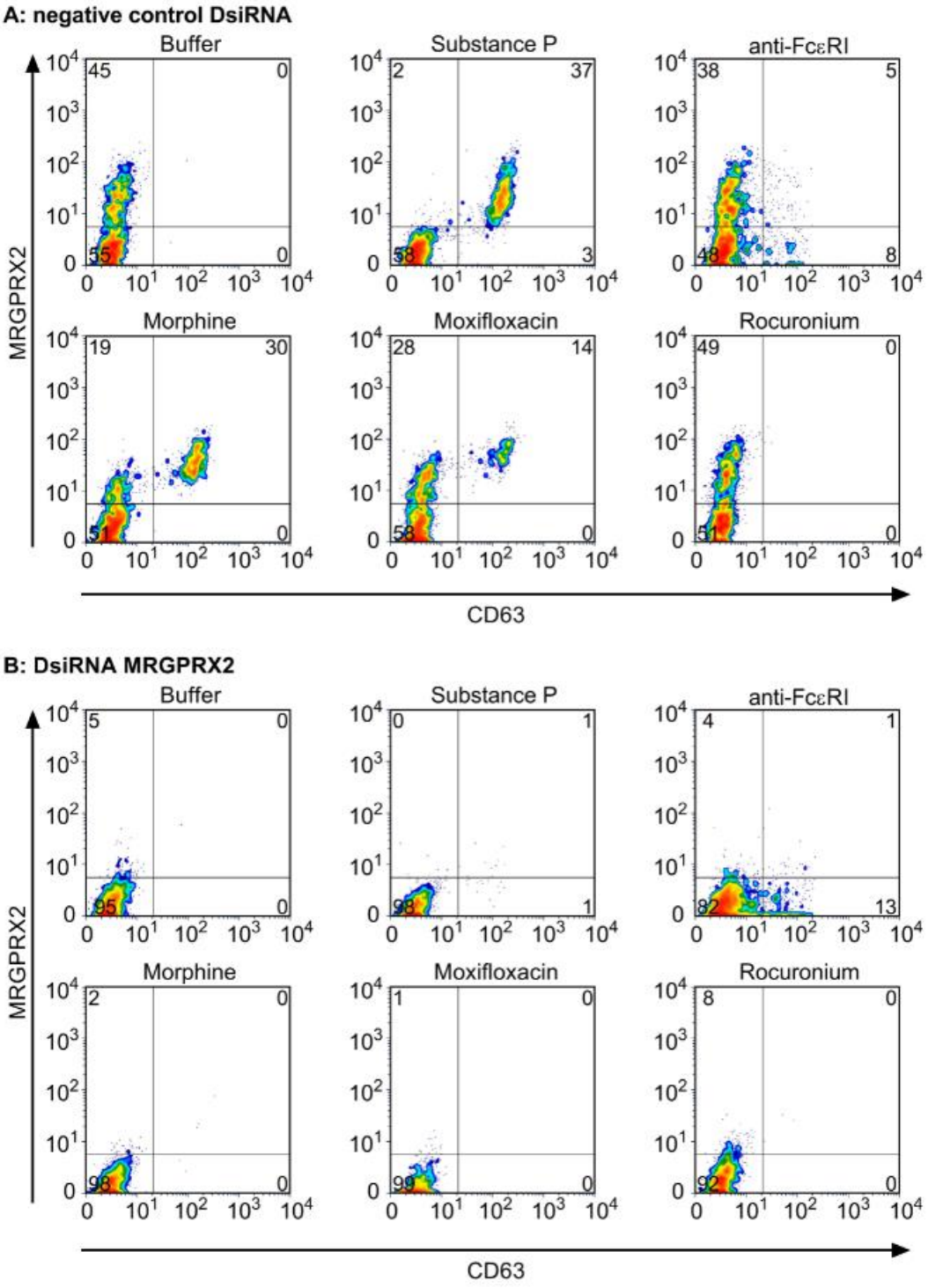
Figure 7. Representative plots of CD63 up-regulation after silencing of MRGPRX2.



Cells were electroporated with a negative control**(A)** or target specific DsiRNA**(B)**. Thereafter, cells were incubated with buffer, substance P (74 µM), anti-FcεRI(2.5 µg/mL), morphine (500 µM), moxifloxacin (571 µM)orrocuronium (1640 µM).

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