

Jun 01, 2018 Version 1

# Nucleofector Protocol for Dinoflagellates using Lonza's 4D-Nucleofector X Unit V.1



DOI

[dx.doi.org/10.17504/protocols.io.qm8du9w](https://dx.doi.org/10.17504/protocols.io.qm8du9w)

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DOI: [dx.doi.org/10.17504/protocols.io.qm8du9w](https://dx.doi.org/10.17504/protocols.io.qm8du9w)

External link: <https://doi.org/10.1038/s41592-020-0796-x>

**Protocol Citation:** Senjie Lin, Huan Zhang, Brittany N Sprecher 2018. Nucleofector Protocol for Dinoflagellates using Lonza's 4D-Nucleofector X Unit. [protocols.io https://dx.doi.org/10.17504/protocols.io.qm8du9w](https://dx.doi.org/10.17504/protocols.io.qm8du9w)

## Manuscript citation:

Faktorová D, Nisbet RER, Robledo JAF, Casacuberta E, Sudek L, Allen AE, Ares M, Aresté C, Balestreri C, Barbrook AC, Beardslee P, Bender S, Booth DS, Bouget F, Bowler C, Breglia SA, Brownlee C, Burger G, Cerutti H, Cesaroni R, Chiurillo MA, Clemente T, Coles DB, Collier JL, Cooney EC, Coyne K, Docampo R, Dupont CL, Edgcomb V, Einarsson E, Elustondo PA, Federici F, Freire-Beneitez V, Freyria NJ, Fukuda K, García PA, Girguis PR, Gomaa F, Gornik SG, Guo J, Hampl V, Hanawa Y, Haro-Contreras ER, Hehenberger E, Highfield A, Hirakawa Y, Hopes A, Howe CJ, Hu I, Ibañez J, Irwin NAT, Ishii Y, Janowicz NE, Jones AC, Kachale A, Fujimura-Kamada K, Kaur B, Kaye JZ, Kazana E, Keeling PJ, King N, Klobutcher LA, Lander N, Lassadi I, Li Z, Lin S, Lozano J, Luan F, Maruyama S, Matute T, Miceli C, Minagawa J, Moosburner M, Najle SR, Nanjappa D, Nimmo IC, Noble L, Vanclová AMGN, Nowacki M, Nuñez I, Pain A, Piersanti A, Pucciarelli S, Pyrih J, Rest JS, Rius M, Robertson D, Ruaud A, Ruiz-Trillo I, Sigg MA, Silver PA, Slamovits CH, Smith GJ, Sprecher BN, Stern R, Swart EC, Tsatsou AD, Tsybin L, Turkewitz A, Turnšek J, Valach M, Vergé V, Dassow Pv, Haar Tvd, Waller RF, Wang L, Wen X, Wheeler G, Woods A, Zhang H, Mock T, Worden AZ, Lukeš J, Genetic tool development in marine protists: emerging model organisms for experimental cell biology. *Nature Methods* 17(5). doi: [10.1038/s41592-020-0796-x](https://doi.org/10.1038/s41592-020-0796-x)

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**Protocol status:** In development  
We are still developing and optimizing this protocol

**Created:** June 01, 2018

**Last Modified:** June 01, 2018

**Protocol Integer ID:** 12704

## Attachments



[Nucleofector Protocol](#)...

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- 1 Harvest dinoflagellate cells using centrifuge method. Determine the lowest centrifuge speed and shortest time at which you can achieve both a good pellet of your species with minimal damage to your species
- 2 Add 1400ul of normal culture medium (e.g, F/2, L1) into a 24 wells plate
- 3 Prepare Lonza's nucleofector solutions: Per reaction use 16.4ul solution SF, SG, or SE and 3.6ul Supplement 1 and your DNA/Vector of choice (\*Note do not add more than 10% the volume of the 20ul reaction)
- 4 Count your cells and harvest 200,000 cells/reaction using the lowest centrifuge speed stated above
- 5 Once the cells have been pelleted, remove all the seawater, resuspend the cells VERY GENTLY with one of the three solutions provided by Lonza (SF, SG, SE). Use 20ul of the solution mix per reaction.
- 6 Place the 20ul cell solution into Lonza's strip kit wells.
- 7 Perform the optimization procedure that is preprogrammed.
- 8 After the electroporation is completed add 100ul of normal culture liquid and resuspend the cells VERY GENTLY and transfer them to the 24 well plate
- 9 Return the plate to normal culture conditions and look for expression of your foreign gene.
- 10 Add selectable agent 24-72 hours after transfection and determine the best setting for your species. Once narrowed down, use Lonza's chart to help target the optimal setting for your species.