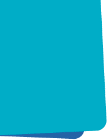
ADN, gènes et allèles



**4**

**Pour aller plus loin (traduction, transcription)  
Programme python (Basthon)**

Nous sommes désolés, les adresses URL Basthon étant très longues, nous rencontrons des problèmes techniques pour la redirection vers le programme en ligne sur Basthon.

Vous pouvez accéder au programme en ligne en copiant l’adresse URL ci-dessous dans votre navigateur.

https://notebook.basthon.fr/?ipynb=eJy1WeFu2zYQfhVC-ZEGddK1LjbAaDtoaqENyIagtfqnDgxaom2iFKmSlBuvyLvsr5\_DL7Y7iZTlREpipAngWCLvPh7vOx6P9I8gZUKYYPTlR5AzSzNqaTD6cT2o2qd2XbBgFORUf83UdxkMAqNKnWLbEfm43ay44UqSjBHDUiXhe0T-0FySVOWF2G5yJi3lmg3IWFNpUs0LiwqEWWzJyrR6pSuWEsGIoHJBFwzxCq0WmuY5rQQu1nap5EQeHZGX5LRzCOw8IvSEnFNitptvJZMpIJVkhsIF1SgnJgDyWfGUk5SfZszAdAwMe4fGGapEgkO3JhlMAsXROSUY3AIpSm4ILYpyDXKm1DifmSotWD8JPlxtN2lpmZ4EDcaMas0ILQkilOaMRAxaV5TQ-ZynS0DZs8vbw86C68EeWYHVpbEsC0ZzKgy7wV2qMtbmzTAH-BbsCsfjOIrG4zAKw3gcwnccx\_g6DsNwEkxkAa6wz7zOCQCxKwYzAVKmqSqlDUayFGIQwEyL0mIgXd4w7yGxBMzNTsinZrI3uO2gMdp5flXxWcrK3Rg7OGVSMA1GWCqtC6esRCRkpSN6KpZDIo4pz6r4Q5JbIprb7QaZAtoM\_Kf\_KmhgZuClLKsYr4beRUUF-3m70XzOQQBmh6FDyVzJKvIlI0wSVkcHmtoZW49kvLKQNb5E3pHaiZwrTWSZCqYszhq84okeTWCNEsLn7f63VcRMAteJfzegn6PEGMGxk4kO\_fG9-uGd-vF9-v2q0b2qPt4nQX8ojibB4Iby0y0L8gqyXSgExE4hMFMpLgdkXhkCoWLbSbUdv6VbAxoCa7vJwM4mJXVmZ1gehTIwSilrzW8ldyuIZMdqZpnkoH4cfvwnb0a1ZPsfrkgLXZ1Z8wImUsf73YvkceG9M-ewyD7qsAp1sfu-\_7fDpLHCRUjz\_oTBMYTgOK-iwG2kuz3QOXmx3UiYIG5e7ZQ5aFhoCRBmgOztZs4lr-j7G9JnnTHTUhtW3t7-qj0vdXsjBtj-Tlcg\_\_kO5daAkuQQhQrz7-NigIJRb8kXSA9Rgt7Hh8g\_hP4BcsflRFK9qGWj2MlGceQfQv8Q1w-hbwljp21krR2GTjsMI9dTOBt8T-x60rWpexI\_YhLXPQvh0KLQjxzGrqf0aN7-pmftejxa7O2PvbWxs3bJjcf3c3U2ccHcPBI\_jyTyD2ElIpgzIUkcbJI4t0ReKfJKkZeJknpo4Scd-gmEbgKYVNzQdUOxZH4g75-kthLykrPf8xp5XiPPa-R4xfRVo3jZxMsmXjaJGl79rB0Tdum0Q68deu3Qa4duJKsLz6drWPuhvZsT5-YVFY4sP7XYeyz2HoudG4xVHjeMfZx4w9GJl09bfn1kWHXCx-0fULlCKrCcWlj7mBDOb6XuZo9gRHttn0z31KuE0uSGn78JyDJnVaz8MpHflxjcruUNjCWf7bLx6avdDtC0fqmFR\_XX8-Glq3WS\_WoDumfVgqrldh0zzejX-tUNC-XEyydi6z0mYUifUBXAaUFzOhN17ob4Sb9CUYoZGnZzXp2cOqgkvyMZ73uPMp01LYVtAUqB9tnkrjEeSWe9vx6RD8AObB5Y31dnIzdbrE7guGk5q0vmuyx5yjNLekLax9j62LA7slXV0l6N1LWqortqo9rv38pjLohRUOPsTg7i8XUTHInaVVOzcDDKH7xwQHhUf-HCAWthM24tGj9MXdsLulfd3wOkF71AenEIkJG9QEYeAAQ7eR9QtDYHAMHG3wcUi0MsgjqhH6g8CGjdD7Q-AAhqjj6gP\_khPoJg7AP6S7ADgKCQ6QM6Z4f4SPTTf34Q\_bBo-4Cg6j4ACEqnPqCL5SE-gkqrFwi2uocDQRnWB\_QJTwUPBoKKrA9ovDwISBc9QA9GWPeZ8lAEqAMfiYDVYa9joc87BP\_26xHM5iA27L7fcEC7Yyu-PeGh9TXe33JB\_f2ApkXBRMcVRGsTxP3eVR49l6KD\_fZbFxx7va2zOtSuTOIWe1Og8slPqWIgN3SaXDu8uVqFsztplQLVlfhK4dHZwT4FHx8k1O0rJvHqEW-it5uZu0KFUzvaugDfQemB5SWwYzhWX9Cdq6y-0exjo7oZyI5ZU\_FbsJNBwQkfV3GapqZcKX7H3ZTv2N3zMNtN185wqcpVVSA3QtUB5A1\_d4G\_L9SxhqUymEw-WSq5EdSQ90qz9ZsX\_F1wfTnY4\_0r01BxmYKl-JZxUwi6nkqaoxfrXyfIEDyLv2CUMASyX7VCm5Oq34cQUo3UlMu5QkCkOOdaKz3NkW1oclq8gVkxjT-2BKMhIMxhc5yyK8tk3RacFWuQyTkYXdNtoffF1Wm3Ffg-gwoaMC3AFEoDR-3eYr1ABsxUQNjpnR3DtiHB8Oy3s1-D62tEmyudU4jK17uXac6lAuVX1\_8DTS\_5Dg