

کمپلکس سازگاری بافت اصلی و پیوند سلول‌های بنیادی هماتوپویتیکی: فراتر از پلی مورفیسم‌های HLA کلاسیک

پیوند آلوژنیک سلول‌های بنیادی هماتوپویتیکی (HSCT) یک روش درمانی برای بسیاری از بیماران مبتلا به اختلالات خونی (هماتولوژیکی) بدخیم و غیربدخیم می‌باشد. ارزیابی توانایی افراد دهنده سلول (Donors) برای HSCT شامل تشخیص دقیق، مطابقت آنتی‌ژن‌های لکوسیت‌های انسانی (HLA) از اعضای خانواده و یا سایر افراد (غیر از خویشاوندان) مناسب می‌باشد. کمپلکس سازگاری بافت اصلی (MHC) که به عنوان کمپلکس آنتی‌ژن لکوسیت‌های انسانی (HLA) شناخته می‌شوند، از گروه خاصی از مولکول‌هایی که بر سطح سلول بیان شده‌اند، تشکیل می‌شوند که برای شناسایی مولکول‌های غیرخودی توسط سیستم ایمنی حیاتی است. مکانیزم عملکرد مولکول‌های (HLA) این است که به سطح آنتی‌ژن‌های خاصی از پاتوژن‌ها بر سطح سلول متصل شده و آن‌ها را به لنفوسیت‌های T عرضه می‌نمایند. از دیدگاه ژنتیکی، HLA از بیش از ۲۰۰ ژن که بر روی کروموزوم ۶ (بازوی ۶p21.3) قرار گرفته است، تشکیل شده است و به سه گروه اصلی HLA کلاس I، کلاس II و کلاس III تقسیم می‌شود. پروتئین‌های نواحی کد کننده HLA کلاس III در ساختار و عملکرد با دو گروه دیگر (کلاس I و کلاس II) متفاوت است و شامل ترکیبات کمپلمان، چندین سیتوکاین التهابی همچون فاکتور توموری نکروز α (TNF α) و یا پروتئین‌های شوک دمایی (Heat-Shock) می‌باشد. ژن‌های کلاس I شامل HLA-A, -B, -C در کنار ژن‌های غیرکلاسیکی که شامل HLA-E, -F, -G, -J, -M, -N, -P, -S, -T, -U, -V, -W, -X, -Y, -Z, -1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -70, -71, -72, -73, -74, -75, -76, -77, -78, -79, -80, -81, -82, -83, -84, -85, -86, -87, -88, -89, -90, -91, -92, -93, -94, -95, -96, -97, -98, -99, -100, -101, -102, -103, -104, -105, -106, -107, -108, -109, -110, -111, -112, -113, -114, -115, -116, -117, -118, -119, -120, -121, -122, -123, -124, -125, -126, -127, -128, -129, -130, -131, -132, -133, -134, -135, -136, -137, -138, -139, -140, -141, -142, -143, 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